Transactions in stone: making sculpture in Athenian society in the sixth and fifth centuries BC
Hochscheid, H.K.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
III The sculptor’s trade

1 Professional status and specialisation in sculpture

The core of the sculpture world of Athens consisted of sculptors and their associates, and all those who physically worked to create statues, reliefs and bases to a finished state. Of this art world, the material and literary evidence which is preserved can be broached from two angles. On the one hand, there are what may be called timeless art–sociological perspectives, such as Becker’s. Their advantage is precisely that they were not devised for a specific period but for a social phenomenon, and that they may have been common to various periods. On the other hand there are diachronic studies, which can be closer in time (or method of study) to the centuries under consideration here.

An example of a historical approach in social studies concerns professionalisation as part of civilisation and the emergence of states;\textsuperscript{528} and specific studies on professionalisation in crafts which are derived from this theory, for example, painting in the city–states of Italy in the Renaissance.\textsuperscript{529} This view defines four progressive phases in the professionalism of Renaissance painters. First, specialist education from master to apprentice is organised in workshops; then, professional organisations or guilds are formed; third, the skills inherent to the trade are discussed in writing and sometimes theorised on; and last, there is a realisation of the history of the trade among its practitioners, which is documented.\textsuperscript{530} While undeniably, city–states in Renaissance Italy differ from ancient Athens, the professionalism in crafts and these four stages of development are useful concepts for an analysis of the Athenian sculpture world.\textsuperscript{531} The evidence presented here will show that professionalisation of the craft of sculpture can be traced in archaic and classical Athens.

\textsuperscript{528} Elias 1939; Kempers 1994.
\textsuperscript{530} Kempers 1994, 6–7.
The image of ancient sculptors ranges from individualists comparable to artists of modern times, such as Pheidias, to anonymous craftsmen of lowly status with no professional awareness. As a tool of study, this dichotomy – Art v. craft – is flawed, since there is no evidence for this notion in ancient thinking about sculpture or about art in general: the Athenian art world of the sixth and fifth centuries shows no signs of such a debate. Most likely the inhabitants of Athens were aware of differences in workmanship (and in prices) among the sculptors in their city, and their observations were unbiased by any distinction of Art or craft. Perhaps they spotted stylistic variations and developments in sculpture over time; it is likely that they noticed varying quality and changing iconography. Another aspect of this awareness is the scale and organisation of manufacture in the sixth and fifth centuries. It is to be expected that statues and stelai on burial grounds and in sanctuaries influenced Athenian perceptions of sculpture. Moreover, publicly visible developments in the production process, such as the rapid expansion of the supply of Pentelic marble in the fifth century BC, must have been very conspicuous, since they involved the construction of specialised infrastructure.

Variations in technical quality of, and innovative trends in the sculpture of a given period, together with the operational details of its production, might be described as its practice range. An essential part of the practice range of Athens’ sculpture is specialisation, two types of which are distinguished in literature. Horizontal specialisation is determined by the variety of goods at the disposal of a particular society: each type of goods is procured by a specialist craft or trade. Vertical specialisation on the other hand regards the number of different skills or trades necessary to create a single product. Ancient economies offered a wide diversity of goods and so were relatively specialised horizontally, yet scholars have considered them poorly developed in terms of vertical specialisation. However, while the number of ancient trades at the same level of horizontal specialisation is undeniably extensive, sculpture does not seem to lack vertical specialisation. Even a

---

532 Burford 1969, 144–5, 199 (in architecture); id. 1972, 96–101; Finley 1965, 38–9; id. 1973, 135; Harris 2002, 70–1 and passim. Cf. also above, ch. II.3.

533 Cf. previous note. An exception is construction for public or sacred purposes, in which the number and diversity of skills cooperating is undeniably great. See Burford 1969, 9; id. 1972, 101–7; Harris 2002, 71.

534 Nor for some other industries, e.g. evidence of specialisation in the manufacture of textile in ancient Pompeii (Schneider 1992, 121). It is not unthinkable that the differentiation of labour (in the definition of this research; cf. below) was quite common in other crafts as well, but is now difficult to establish.
summary glance at the types of expertise necessary to make a statue and erect it on a pedestal shows that it cannot be confined to a craft or two. For example, in the final stages of production the statue needed to be painted, the base inscribed and dowels forged and inserted to set up the monument.

The status of the sculpture trade in Athens during the sixth and fifth centuries was determined both by comparison with other crafts and by the standards which society set. Besides archaeological evidence, the position and role of sculpture appears in descriptions of the trade and designations used for it in contemporary or near-contemporary sources. Part of the meaning of craft was indicated by the word *techne*, which in later scholarship acquired a subtext of Art, in the modern, capitalised sense of the word. Although a rudimentary semantic overlap of Art and *techne* exists, its specific application to the production of Art objects is problematic. *Techne* indicated know-how to do or to produce something; in craft this involved the knowledge to create an object according to a pre-existent idea, with as little risk as possible of its falling short of the maker’s expectations. However, this is only part of the meaning of *techne*. Thinking about craft or sculpture in particular focussed on the fact that it was manual labour, which was one of the main reasons for negative connotations. Those who did work of this kind were called *banausoi*, and their trades the *banausikai technai*. Nonetheless, in the philological tradition *techne* has often been used for sculpture which nowadays is considered Art.

In antiquity, however, *banausoi* were lowly makers of things: not only sculptors, but also coppers or fullers. The, in modern eyes, rather vague boundaries of the meaning of *techne* may well be the result of a scholarly tradition in which the sculpture of Athens was split into Pheidias and Alkamenes on the one hand and anonymous sculptors (often with the implication of low quality) on the other. It has long been recognised, though, that this view


537 This rift can be traced in titles on Greek sculpture: e.g. Pheidias and Polykleitos have many monographs named after them (e.g. Polykleitos: Vermeule 1969; Moon 1995. Pheidias: Hekler 1924; Langlotz 1947). The others are discussed in Lechat 1906 (before Pheidias); Schlörb 1964 (after Pheidias) and Frel SAA. Recently, this trend has changed: for example, Nick 2002, whose title features the Athena Parthenos, not her maker; or Vlassopoulou 2005 or Despinis 2008, who both discuss badly battered sculpture fragments within the tradition of so-called *Kopienkritik*, but do so with nuance and an open mind as to the *Meisterfrage*. 
lacks nuance. The first important reason for its inadequacy lies precisely in the semantic range of *techne* as a concept, both as it developed over time and at any given moment during the sixth and fifth centuries BC.

Although early occurrences of *techne* usually display a strong connection to craft, its meaning quickly starts to expand and diversify. The *Odyssey* portrays Odysseus himself as an exceptional craftsman, as illustrated by his construction of the marriage bed and his knowledge of navigation at sea (also a *techne*). Moreover, the sea-god Proteus’ ability to change shape is described as a devious *techne*. This twofold meaning continued to exist during the archaic period, for example in the work of Hesiod or Solon. *Techne* could apply to any honed skill, whether in creating an object, performing a procedure, or being cunning and crafty. At this time, little social distinction adhered to *techne* yet. It was simply a recognition of creative or skill-related knowledge in a wide range of activities and the resulting objects: there is nothing shameful in Odysseus’ technical prowess.

A constant element in the definition of *techne* is teachability. Technical performance depends on certain rules, and if these are learned and applied properly excellence can be achieved. They must be mastered before a craftsman can be considered a *technites* or expert. Thus, *techne*, in the sense of knowledge of a craft and its rules, is emphatically learnable. An influential group to use the educational aspect of *techne* – as the case was,

---

538 In particular, it originally related to *tekton* in the craft of building with wood: Schneider 1989, 6–7; Roochnik 1996, 21–4; Löbl 1997, 28, 31, 211.

539 *Od*. 23.180–204; 5.270 (navigator); 4.455 (Proteus). Cf. Burford 1972, 198–9; Löbl 1997, 25–7 notes that the number of specific uses of *techne* grows with the number of specialist crafts. Initially it was for any kind of activity or process (id. 211). Compare also Schneider 1989, 11–31, esp. 16, 25; Roochnik 1996, 23.


541 Ibid.; also Schneider 1989, 14–6, 154, 168–70.

542 Himmelmann 1998, 50, 55.

543 These rules, i.e. the abstract part of *techne*, are the *episteme* of a particular field of expertise. Differences and similarities between *techne* and *episteme* are not pursued here, since this study is concerned with the everyday practicalities and possible social implications of the terminology.

544 For example, Pl. *Prt*. 319b–c, *Phlb*. 55e–56a; Arist. *Metaph*. II.1, 981b7–10: ‘...όλως τε σημείων τού ειδότος και μη ειδότος το δύνασθαι διδάσκειν εστίν και διαι τούτο την τέχνην της εμπειρίας ήγοιμεθα μάλλον επιστήμην είναι: δύναται γάρ, οι δὲ οὐ δύναται διδάσκειν’; ‘...in general the sign of knowledge or ignorance is the ability to teach, and for that reason we hold that art rather than experience is scientific knowledge; for the artists can teach, but the others cannot’ (transl. Tredennick, in Coooper and Hutchinson 1997). Another word for expert is *demiourgos*, which features prominently in Plato’s *Republic*. Cf. also Schneider 1989, 24–5, 149 (particularly in medicine), 152–6, 159.
for rhetoric – were the sophists. Perhaps as a result of their polemic with Plato, *techne* acquired an ambiguous value later in history. Plato’s objections against the sophists and their teachings are well outside the scope of this study, but his classification of knowledge and views of handicraft have strongly coloured classical scholarship.

In her study of work in ancient and medieval thought, B. van den Hoven argues that apart from the generally negative views of Plato and Aristotle on handicrafts, there were alternative movements in antiquity which have been neglected because of the historical standing of the fourth-century philosophers. She indicates that even within the works of Plato and Aristotle, distinctions appear in the appreciation of the infamous productive *technai*. For example, in so far as *technai* use abstract thinking in design or execution, they were considered more valuable and worthier occupations than when this was not the case. Carpenters who used precise measurements applied a basic form of mathematics which lifted them above those whose activities were purely mechanical and did not require thought; architecture was even better, for it was mathematically complex.

On the other hand, painters are at one point famously dismissed by Plato for creating an image of reality twice removed from the original. The sculpture trade, on the other

545 Pollitt 1974, 34; Roochnik 1996, 63–82.
547 E.g. Finley 1965, as noted by Van den Hoven 1996, 90, 111.
548 Or *poietikai technai*. Van den Hoven 1996, 107–11; also Balme 1984, 147–8; Schneider 1989, 7. Van den Hoven notes that Plato and Aristotle did not agree on this. The former is mainly concerned with a metaphorical use of crafts, working towards ethical issues by analogy (e.g. in *Plt.* 281d–e), although elsewhere the position of crafts in the hierarchy of knowledge is addressed (e.g. *Rep.* 370b–371e). Aristotle embeds the *technai* in a general framework of knowledge and apparently deems them worthy of study in their own right (e.g. Arist. *Metaph.* II.1 993b, 21). Cf Schneider 1989 154–5, 162; Van den Hoven 1996, 101–5; Roochnik 1996, 89.
550 See previous note. Physical and especially mindless labour prevented the improvement of the soul (Arist. *Pol.* 1337b 7–14). Van den Hoven 1996, 91–2 describes a threefold differentiation in the status of *technai*. For the development of this categorisation over time see 109–11. On a related note, in Plato’s *Republic* it is adamantly stated that craftsmen cannot have original ideas of their own (596b); but the different levels of status of *technai* suggest at the very least that philosophers were aware that abstract thinking was part of creating sculpture. It would not have escaped them, for example, that the design of a statue and its emergence from an unhelpful block would require at least as much abstract thought as the measurements necessary to make a cabinet: pure routine (*empeiria*) or mindless habit cannot suffice.
551 *Pl. Rep.* 596a–597e.
hand, is seldom discussed by Plato, and one can only speculate how he would have classified
it.\textsuperscript{552} An exception is the dialogue between Socrates and Hippias on the quality of fineness, in
the sense of the beautiful.\textsuperscript{553} Here, Plato illustrates a point by means of the chryselephantine
Athena by Pheidias.\textsuperscript{554} The statue is made of various precious materials, each most suited to
the part of the figure where it is applied, like an excellent craftsman such as Pheidias would
do. The propriety of the use of materials makes the statue beautiful; had they been used
differently, its beauty would have been less. However, although a sculptor and his work are
discussed here more thoroughly than is usual in Plato’s work, the object of the discussion is
not the nature of sculpture as a craft. It is merely used as an example.

Sculpture as a subject in itself only appears in the theory about the subdivision of
\textit{technai}.\textsuperscript{555} Of particular relevance is the notion that sculpture is an imitative art – a case of
\textit{mimesis} – although sculptors usually do not follow nature exactly. If they did so, for example,
in a statue larger than life-size, Plato argues, the upper part would seem too small for the
body.\textsuperscript{556} So, the true proportions of a human figure may be distorted in order to
accommodate the imperfections of human visual perception. Although modifications of
nature’s example are in philosophical terms reprehensible, the protagonists in the \textit{Sophist}
quite agree that it makes the statue beautiful in appearance, while a mathematically correct
rendering would not be pleasing visually.\textsuperscript{557}

\textsuperscript{552} Although painters and sculptors are alike in their distance from original ideas, Plato’s objections
against crafts are not targeted specifically at sculpture. Plato’s categories of craft are based on
the functionality of the items, placing painting in the group which provides pleasure (‘playthings’,
in \textit{Plt.} 288c; cf. Schneider 1989, 172). One might assume that sculpture, too, falls into this
category; but instead, statues and sculpture are used as examples, and are nowhere linked to the
disparagement that is painting’s lot. Thus, the painting of a statue (not even the carving proper)
illustrates in the \textit{Republic} (420c–d) how the specific characteristics of each part make the whole
image beautiful – like in the ideal state. In the \textit{Ion} (533b), sculpture is mentioned to demonstrate
the capacity of an expert in a field to judge all creation in that field. If Plato strikes a different
tone regarding sculpture and painting, it perhaps has its roots in the (partly) religious nature of
sculpture, especially cult statues. Plato never mentions any such factor, but it is curious that
sculpture does not appear as a topic in its own right, while other crafts – painting, music – do.

\textsuperscript{553} \textit{Pl. Hp. Ma.} 289d–290e.

\textsuperscript{554} Ibid. 290a–b; cf. \textit{Pl. Rep.} 420c–d (above n. 552).


\textsuperscript{556} \textit{Pl. Soph.} 235d–236b. Perhaps it can be inferred that Plato would consider a sculptor who did not
apply this rule as lacking in \textit{techne}.

\textsuperscript{557} Ibid. 236b–c classifies sculpture of more than life-size as \textit{phantastike techne} or semblance-
making, since the proportions have to be adapted and are not true to the original, i.e. not a
From a sculptural perspective, this is the crux of Plato’s views on the visual arts of his time. He creates the problem that objects should be a reflection of knowledge in order for the technē to be acceptable. However, he also acknowledges the following: there are sculptors who are experts in their trade; they apply rules which defy philosophical, or more precisely, mathematical knowledge; yet if they would not do so, they would be bad craftsmen. Plato shows both appreciation of good sculpture and rather a lot of insight in the process of creating it.558 Not for the first time, this raises the question whether Plato’s opinion of sculpture, or even art in general, was as negative as it came down in history.

It is likely that the fourth-century objections against productive technai were often directed at the consequences of doing physical or trade-based work:559 the body was strained and degraded, and since a lot of time was taken up by the job, little freedom remained either in a practical or spiritual sense. The worst part, however, was that one had to be paid by others.560 To the philosophical Athenian elite of the fifth century, being a sculptor was an occupation of little status. It was a hard and dusty job, linked more to the senses than to abstract thought and as a result partly irrational. Moreover, it involved earning money and so made the craftsman dependent on others instead of being ‘his own man’, a situation which was to be avoided.561 Despite this, the knowledge to make something from a preconceived idea, especially when using measurements, was recognised to some extent by Plato and certainly by Aristotle as a form of abstract thinking.562 Thus, the philosophical evidence does not support an unequivocal ranking of sculptors among the lowliest banausoi. Moreover, the reasons why crafts were held in low esteem are sometimes contradictory and often involve non-philosophical, but professional or social arguments. With regard to the latter, the sculptors’ work probably had as humble a status as other handicrafts; but in

558 For example: Pl. Men. 91d.
560 Van den Hoven 1996, 92–3; also Schneider 1989, 163. Himmelmann 1998, 55 notes that it was not the manual work per se, but the social context which created a negative image: because philosophers by definition associated the sale of goods with greed, trade and tradesmen were viewed as morally objectionable.
561 Van den Hoven 1996, 92–3; n. 74, 76 lists ancient authors who wrote to that effect. See also Balme 1984, 141.
562 Pl. Rep. 529e describes how sculptors or other craftsmen may carefully draw plans and through them reach very satisfactory results. However, he goes on to conclude that nobody would study aspects of geometry from the artist’s plans. See also Schneider 1989, 178–9, 183; and Van den Hoven 1996, 85, 89.
philosophical terms there was the admittedly subtle differentiation in which theoretically or mathematically inclined trades came out higher than others.\textsuperscript{563}

Obviously these are views of an elite, and the ramifications in other parts of Athenian society are difficult to grasp; moreover, the main philosophical sources are from the fourth century BC rather than the fifth, let alone the sixth. It has been argued that in the fifth century, the debate about the limitations and qualities of \textit{techne} became widely known in Athens, in view of the word’s occurrence in contemporary tragedy and changing views on the relation between man and nature.\textsuperscript{564} Specifications of types of \textit{techne} became more and more detailed over time: while initially carpentry, shipping and smithing were the main fields of application within the range of craft–related meanings, an extensive list of different \textit{techne} specialisations can be drawn up from fifth–century texts.\textsuperscript{565} In these cases, adjectives are used to indicate the particular craft intended, which would seem to reflect advancing professional differentiation on a linguistic level.\textsuperscript{566}

That specialisation was an issue in the classical period is clear from contemporary authors as well. Plato in his ideal state considers it necessary in order to achieve a desirable level of workmanship. In the case of warfare, for example, specialisation is a matter of life and death.\textsuperscript{567} He even has Socrates suggest that it is the governing principle of ‘urbanisation’.\textsuperscript{568} Although his concept differs from the modern sociological term, it is interesting that Plato refers to it. This division of labour, which allows a city to function, is linked to categorisation of types of \textit{techne}; and those \textit{technai} which aim only to please and are therefore of a lesser order, can still be useful in, for example, education. Again, the point is made that even though some \textit{technai} are not ‘true’ in the philosophical sense, they have their use and their value in a society.\textsuperscript{569} It must be significant that by the fourth century BC,

\begin{flushleft}
\textsuperscript{563} As a result, \textit{techne} is closer to \textit{episteme} (knowledge) than to \textit{empeiria} (experience). Cf. n. 562.

\textsuperscript{564} At the very least, tragedies show that the discussion about \textit{techne} in relation to nature (\textit{phusis}) and the level of man’s control over nature was conducted among Athenian audiences, as pointed out by Pollitt 1974, 34; cf. also Van den Hoven 1996, 83–8 for an in–depth discussion of \textit{phusis} and \textit{techne}. Also Roochnik 1996, 33–43, 57–63; Löbl 1997, 73–125.

\textsuperscript{565} Schneider 1989, 93–4; Roochnik 1996, 28, 34, Löbl 1997, 181. None of this equals the philosophical subdivision by Plato, as represented by Janaway 1995, 172 fig. 2.


\textsuperscript{567} Pl. \textit{Rep}. 370b; 434a–443c.

\textsuperscript{568} Ibid. 369a.

\textsuperscript{569} As in Pl. \textit{Rep}. 400e–401a, regarding music, painting and \textit{techne} in general.
\end{flushleft}
labour specialisation in craft is outlined in philosophy, whether positively or not. Added to the growing awareness which is suggested in fifth-century sources such as drama, the evidence not only sheds light on developments in the Athenian art world of the fifth century, but also indicates contemporary recognition of the increasingly complex practice range in various crafts.

2 TERMS OF THE TRADE

Sculpture terminology by the sculptors’ own hands occurs in inscriptions, mostly in building accounts. The latter generally describe the nature of the work and in the best cases, as was discussed in the previous chapter, specify prices for various jobs. However, actual names of professions are very rarely mentioned. Private inscriptions provide us with sculptors’ names in the form of signatures, the subject of the next section in this chapter. Yet no sculptor in Athens appears to have signed his work with his name as well as his profession, so the only way to find an ancient Greek term for sculptor would be if he also was the patron who set up the statue and chose to commemorate this in the votive or sepulchral inscription.570 This is unusual. The inscriptions on private votive and grave monuments in Athens in the sixth and fifth centuries offer no examples of such a procedure.571 Insight in the Athenians’ terminology for sculptors therefore rests once more on literary testimonia.572

Two names for statue-makers are listed in Harris’ overview of professional names: *agalmatopoios* and *andriantopoios*.573 Both terms disregard the material of the sculpture, and

570 Bases with inscribed sculptor signatures have been included in the database even if they did not meet all the selection criteria of this study.
571 Though arguably, a gravestone could have been set up for a sculptor’s son. Cf. n. 606 and p. 154.
572 Many of the sources for terminology used here are later than the fifth century BC, which decreases their value as indicators of specialisation in the period of study. However, since terminology is one of the few sources of information regarding specialisation in sculpture, and (with the partial exception of Philipp 1968) no previous philological discussions of it seem to exist, an attempt has been made to collect sixth, fifth and fourth-century terms; the use of later sources was sometimes necessary to fill the gaps in this evidence.
573 Harris 2002, 88–9; *agalmatopoios* appears in *IG II²* 108 line 9, also in *Pl. Prt.* 311c. *Andriantopoios* (maker of (human) figures) is used in an unrelated enumeration by Socrates in Xenophon’s *Deconomicus* (6.13) and as an example in his *Memorabilia* (a/o. 2.6.6–7; 3.10.6–8); also in *Alc.* II 140b. Cf. Hebert 1986, 129.
are instead concerned with subject matter: andriantopoios at first seems to suggest someone who creates human figures, where agalmatopoios evokes a wider range of meaning.\textsuperscript{574} Agalma can, in fact, refer to such diverse things as (grounds for) glory or honour,\textsuperscript{575} a gift pleasing to the gods\textsuperscript{576} or even just an image in general, including sculpture.\textsuperscript{577} The best known meaning of agalma is perhaps a depiction of a deity, but this is only one of many uses of the word, especially in the sixth and fifth centuries.\textsuperscript{578} The notion that agalmatopoios indicates a sculptor’s specialisation in depictions of divinities, as opposed to a maker of mortals or andriantopoios,\textsuperscript{579} is not corroborated by the textual evidence from these two centuries; that kind of nuance only appears in later sources.\textsuperscript{580} Moreover, agalmatopoios occurs frequently enough in fifth and fourth-century sources to suggest that it was quite a common, non-exclusive term for a maker of statues, as a specialisation in divine figures might suggest.

A similar issue of distinction between sculptors’ labels occurs in Aristotle’s \textit{Nichomachean Ethics}. Here, the technical prowess of Polykleitos is compared with that of Phedias: while the former is described as an andriantopoios, the latter is considered a lithourgos sophos.\textsuperscript{581} Lithourgos is usually translated to English as stonemason, because of

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{574} Bettinetti 2001, 37–42 gives an overview of both words and their semantic development. Andrias essentially means an object which resembles (the type of) a man (38), but she notes that it was at least in the fourth century also used for figurines. The suggestion that andrias refers to sculpture in bronze, which has been proposed in the past, Bettinetti proves to be unjustified (38–9).
\item \textsuperscript{575} LSJ \textit{s.v. ἀγαλμα}: among the examples listed A. Ag. 208 (with regard to children) and Pl. N. 3.13. For a thorough investigation of its semantic and linguistic development over time, see Bettinetti 2001, 27–37.
\item \textsuperscript{576} LSJ ibid., e.g. Od. 8.509 (of a sacrificial bull) or Hdt. 5.60 (with regard to a tripod). Cf. Bettinetti 2001, 30–1.
\item \textsuperscript{577} LSJ ibid. For an example in sculpture, see Arist. Pol. 1336b 15; for image, see e.g. Pl. Ti. 37c. Literature see Donderer 2007, 25 n. 16; also Bettinetti 2001, 33–5.
\item \textsuperscript{578} E.g. Hdt. 1.69.4; 1.131.1; 2.42.6; 2.46.2 (regarding statues of Pan); Lys. 6.15: in contrast with \textit{eikones} of mortals, Hdt. 1.31.5; Isoc. 9.57. Cf. Keesling 2003, 10. Stewart 1990, 63–4, takes these terms as a sign of specialisation, notwithstanding the variation in meaning.
\item \textsuperscript{579} Stewart 1990, 63–4; also K. Lapatin, Review, in \textit{ABull} 79 (1997) 148–9 n. 6.
\item \textsuperscript{580} Hebert 1986, 129; Harris 2002, 68–9. The contrast of andriantopoios as maker of men and agalmatopoios as sculptor of divine figures emerges only in Hellenistic times, e.g. \textit{Laterculi Alexandrini} 7.3–9 (T 115) where Phedias, Praxiteles and Skopas are listed as the latter while Polykleitos, Myron and Lysippus counted among the former (Hebert 1986). Bettinetti 2001, 39–40 shows that andrias was used for sculptures of divine as well as mortal figures in the fifth century (cf. Pl. N. 5.40; Ar. Pax 1183e, Av. 1115; Hdt. I.183). Cf. above n. 574.
\item \textsuperscript{581} Arist. \textit{Eth. Nic.} 6, 1141a9–12. The various translations of this passage differ a great deal: e.g. D.P. Chase (1998) calls Phedias a scientific or cunning sculptor and Polykleitos a (ditto) statuary; H.
\end{enumerate}
\end{footnotesize}
the similar meaning of the constituent parts, *lithos* and the stem *erg*–. However, its use in connection with Pheidias shows that the work of a *lithourgos* cannot have been limited to the production of building blocks or even to advanced architectural work like fluting column drums. A related term is *lithokopos*, or stone cutter. The ending –*kopos* may sound as if it meant something of a rougher method of cutting stones, e.g. in the setting of a quarry: but Demosthenes uses it for a man ‘who was working on a nearby monument’ in the city, so no quarrying is involved there.

Unlike *agalmatopoios* and *andrianthropoios*, where no material is implied, stone is the common denominator of the latter two words, *lithokopos* and *lithourgos*. The wealth of labels related to stone is no surprise, since the purposes of stone extended far beyond votive and funerary sculpture in ancient Greece and thus required many semantic variations. The terminology of bronze production is similarly rich, although *chalkeus* over time became a common word for such divergent jobs as casting bronze statues, making jewellery or forging 

---

582 Apart from λίθος (stone), also LSJ s.v. λιθα, which like *lithos* indicates a precious variant of stone but can also refer to marble, and λιθά, a rare equivalent of *lithos*. Marble is usually specified by the addition leukos or marmaros, or a geographical indication. The LSJ list of combinations with *lithos* is long: there are many varieties for stone-working tools and their application, and for types of worked or unworked stone.

583 Plu. Per. 12.6.4; Alc. 15.4.1. LSJ also mentions the later word *lithoglyphos*, sculptor in stone or marble (e.g. Gal. *Adhortatio ad artes addiscendas* 5.7; Luc. *Somn*. 18.12). A term for stone mason specifically applied to building is *lithoxoos*, stone or marble-mason; again, this word was also used for sculptors in general (e.g. Plu. *Mor.* 74e2). *Lithourgos sophos* may refer to organising production of the sculptural programmes of buildings (especially in the case of Pheidias); but the interpretation of architect is not convincing, because this job revolves around sculpture, and not so much around construction.

584 D. 47.65; also in Antiph. Soph. 92.

585 For construction, the specification for the material may have been common, which is perhaps to be expected: when ordering a statue as a votive or even grave monument, the material is purely a personal choice, while in construction, most of the architectural elements are in a certain material by default, at least within specific periods. Defining craftsmen by the material which they work is the most obvious way of distinguishing them.
iron weapons. In that branch, the material became less important than the craft, the process of manufacture. Considering the existence of sculpture terms like *agalmatopoios*, where neither the material nor the method of production plays a significant role, it is clear that the boundaries of specialisations in sculpture production are vague. Someone who was a *lithoglyphos* would probably not have worked in bronze, but on the other hand, we know that Pheidias worked in that material and he is also known as a *lithourgos sophos*. In short, a craftsman could be described by various names of professions if he was active in more than one area of statue-making, whether in bronze and marble or in other materials.

Words like *agalmatopoios* or *andriantopoios* which, whatever their semantic nuances, do not refer to the material, operate on a more general level than the previous group. They lean towards the genre or theme of the sculpture, are more focussed on the final result, and they also occur less frequently than labels related to materials or production methods. However, genre-specific terms have the problem that they are likely to have occurred in compounds (as is the case with *andriantopoios*, for example), which may have been less prone to survive in the type of ancient texts on which scholarship relies. Herms, for example, were apparently produced by sculptors who to a certain degree specialised in them: the *hermoglypheis*. Similarly, the trade of coroplasts was described sometimes as *zooplastein*, literally to mould to the life, or mould (clay) statues. The term is very rare in earlier sources, and later tends to be taken as the moulding (or creation) of creatures or live beings. In stone sculpture, the equivalent is *zogluphos*, which is translated as sculptor; but again the examples are scarce and late. Nevertheless, these words show that apart from the material

---

586 Χολκεύς (e.g. Il. 14.295; Od. 3.432; Aes. Fab. 346 title; Hdt. 1.68.6; Pl. Cra. 388d4; etc.), χολκοσχήματος (e.g. Aes. Fab. 95.1), χολκότυπος (e.g. Xen. HG I.26.3) all indicate a blacksmith or smith, a maker of bronze weapons, a copper or bronze worker or maker of bronze statues (cf. TLG). Interestingly, many centuries later Plutarch Mor. 820b2 uses χολκοσχήμω for 'making honorary statues in bronze'.

587 A maker of herms is an ἐρμογλυφεύς. It should be noted though, that the range of the meaning of 'herm' was probably wider in antiquity than it is considered nowadays. Cf. below p. 271.

588 LSJ s.v. ζωοπλαστέω; cf. Lyc. 844. Ζωοπλαστής means Creator in the work of Philo Judaeus (c. 20 BC–50 AD; e.g. De Opificio Mundi, 262.3; 67.10). Pottery terms have been left out of this discussion since it is a different kind of activity than sculpting in clay, with largely its own jargon.

589 LSJ s.v. ζωογλύφος and ζωγλύφος; AP 12.56 (Mel.). It must be noted that the combination of sculptural terms in later sources, and the relevant objects themselves in the sixth and fifth centuries, strongly suggests that those objects and their manufacture must have had a vocabulary in the earlier period as well.
of the sculpture, other semantic elements could be included in the terminology of the makers, such as a method of production or the subject.\textsuperscript{590}

Figurines were the main business of many coroplasts, and human figures and animals favourite genres. If indeed zooplastes and zoglyphos refer to a specialisation of subject matter, similar combinations may have existed for other iconographic themes, and could have been lost to us due to their infrequent use in texts. This is all the more likely because the richest sources for stone-working terminology are the contract inscriptions of large-scale construction projects, where small statuettes are not mentioned. Private equivalents of such accounts do not survive. The (mostly public) contracting records of architectural sculpture colour the survival of sculpture terms, giving us a higher frequency and wider variety of words in for example the lithos range. The small votive figurines in many different materials that abound in most Greek sanctuaries (and their archaeological assemblages) are rarely, if ever, worth mention in the eyes of ancient authors. As a result, their production now lacks the labels which it undoubtedly had in antiquity. This effect is enhanced by the possibility that small votives or grave gifts could be bought from stock rather than on commission: no contracts were needed, so no documentation survives. The preservation of specialist terms like figure-moulding, or the herm-cutter, in later times suggests that these must have been either common or important specialisations – even if their main period of use was in later centuries than the sixth or fifth.\textsuperscript{591}

Three semantic types can be distinguished among the terms of the sculpture trade. Labels of the first category focus at least in part on the material (e.g. those which include a form of lithos). Of these, bronze or stone-related terms seem to be more numerous: marble or other specific stone types are conspicuously less common.\textsuperscript{592} The second group is often linked to the first, but they include (or are) a reference to how the materials are worked, so for example, the working (\textit{erg-}) or cutting (\textit{glyptes}) of stone, or how bronze is hammered or

\textsuperscript{590} This relates to the issue of live models in ancient sculpture, which would demand too much of a digression from the current topic to be addressed here.
\textsuperscript{591} It is impossible to determine whether words which first appear in e.g. Hellenistic texts had been in use before then. However, since sculpture in various materials survives from the sixth and fifth centuries, some terminology existed for their manufacture. The difficulty remains that the level of specialisation of such terminology cannot be established by extrapolating from later sources.
\textsuperscript{592} That being said, \textit{lithos} meant marble with the additions \textit{leukos} or \textit{marmaros}, and marble may well have been the intended meaning, even if the adjectives were left out (LJS s.v. \textit{liθoc}).
cast. The first and second categories are often combined. The third group of labels focuses to a greater extent on the objects themselves. Zooplastes may be one, if the meaning of creatures for zoo- is accepted, and hermoglyphes certainly falls into this group. Exclusive emphasis on the object is rare: at most, the production aspect is reduced to a general term of creation.

Agalmatopoios and andriantopoi are therefore examples of labels which focus on the result. Even clear-cut descriptive terms, however, can be problematic: because of the wide semantic range of agalma, a maker of agalmata is rather vague. Agalma may designate many things, from a cult statue to a gravestone. This raises the question whether any terms distinguish the purposes of sculpture, for example votive or funerary? The tenet that agalmata were more often votives than grave monuments can not really be verified, but it is clear that other terms specifically refer to votives (e.g. the general anathema) or gravestones (e.g. sema or mnema, as many epigrams attest to). Lithos as a feminine noun can mean tombstone as well (although it is rare), and a common term is stele. Many of these words apply to different types of monuments. An anathema can be anything, from a little vase to a larger-than-life kouros. A stele can be a public record of laws or treaties inscribed in stone or a personal votive or grave marker: even its appearance is not precisely circumscribed. It can be any kind of standing stone, whether with a relief, a carved or painted inscription, or even without any further decoration.

Sources mostly provide sculptural terms related to material, the work process or a combination of these. In fewer cases, the terminology refers to the subject of the sculpture, sometimes combined with aspects of production. Composites of subject and material do apparently not occur, but their existence cannot be excluded. If they did, they must have been uncommon. Subject-related terms, on the other hand, appear regularly; and often, their semantic range is rather wide. Even though they refer to what the sculpture represents, the

---

593 The difference between casting, hammering or forging bronze can be denoted by numerous words. For example, chalkochutos or choneutos was used for objects cast in bronze; for bronze workers cf. above n. 586. Sphyrelaton is a better known word related to hammering metals. Cf. LSJ; TLG.

594 LSJ s.v. anaglyphe: a work in low relief. Its occurrence and derivatives in LSJ and the TLG, however, mostly date to the Roman period or late antiquity. The root appears in various combinations all related to carving, cutting or engraving, for example γλυφή (carved work) or γλύπτης (both engraver and sculptor).

595 LSJ s.v. ἀγαλμα: Pi. N. 10.67.

596 LSJ s.v. στήλη.
'what' usually applies to several genres used in the record of this study. The last categories, terms of material and production, are far more specific. This makes sense if one considers the settings in which they were used. The various qualities and characteristics of different materials require expert knowledge. For example, in large projects such as temple–building, it was essential that suitable techniques and expertise were used in the right places. Specific terms to indicate specific work were more necessary in projects where many cooperated. The need for precise labelling would have been less in small workshops of a handful of men, where jobs overlapped. They used jargon as well, but this would hardly be used in literary texts and only sporadically appears in epigraphy. Nevertheless, labels for basic aspects of the work, like polishing or smoothing, prove that professional terminology existed here too.597

Lexically, the most important division in sculptural specialisation is the one between metal (more specifically bronze) and stone.598 The fact that marble is rarely indicated separately shows that it was so ubiquitous that the need for differentiation ceased to exist. The way in which a material is worked is the second most important drive behind terminology, distinguishing, for example, cutting and moulding. Words referring to themes or genres, or to the appearance of the finished sculpture are from a semantic point of view much vaguer. The ancient Athenians who lived with these statues and reliefs, however, doubtlessly knew who they meant when they talked about the agalmatopoios, and what he did for a living. From the perspective of production of sculpture, its commissioning, carving and setting up, subject–related terms were very relevant. For a patron, the choice between metal or stone would be an early one to make, followed by further specification of the selected material; but what the statue was to represent was probably at least as important.

Finally, with regard to the sculpture workshop it is difficult to draw direct conclusions from these terms. The nuances of Greek terminology of stone working are impressive and in sync with their widespread use among the technically advanced sculptors of ancient Greece. There are different words for different jobs but, as it appears, not to an extent where parts of the process, such as e.g. polishing, can be put down as specialised technai. Most likely, such tasks were done by someone who worked in a workshop, i.e. a sculptor or someone who was

597  E.g. a number of composites of ἔξω (LSJ) to smooth; e.g. καταξέω means polishing, but also carving. A famous word for polish, probably with the use of wax, is γανώσις, which will be discussed below (ch. III.4).
598  Cf. above n. 574.
learning to become one or by a slave. Because of this arrangement, no word for the polisher was used outside of statue-making circles.

Sculptors specialising in votive or funerary work are not lexically distinguished, and the terminology of genre specialisation is either too marginal to determine, or impossible to trace after so many centuries. References to genre or function were perhaps more general, layman’s terms, for an audience that did not have or need the technical knowledge of those involved in the actual manufacture. The wealth of terms for sculpture appears to be reflecting advanced stone-working practices, although not necessarily an equally advanced trading system of sculpture. The terminology of sculpture may not bring much insight in the specialisation of the profession or in separate aspects of the work in the workshop, but it shows that sufficient specialisation existed to require distinctive labelling among the craftsmen themselves.

3 Sculptors’ Hands and Signatures

Signatures are the most direct evidence for the lives and careers of sculptors in Athens. More importantly, they show something of their behaviour: signing can, for example, be seen as an expression of professional pride, or a claim to publicity. Through this extraordinarily direct source, and by means of literary testimonia, this section will investigate the identity of the sculptors of Athens in the sixth and fifth centuries.

Many signatures are preserved on bases of votives and some on gravestones (table 4, signature list). Of the votive sculptures in this study, none are signed on the statue or stele proper. Gravestones sometimes have signatures: a grave stele from the second quarter of the sixth century identifies Chairedemos as the deceased and Phaidimos as the sculptor. An example from the third quarter is a sculptor’s ethnic on the base of Xenophantes, Parios (pls. 14a–b). The sculptor is thought to be Arisitan of Paros, whose name is better preserved on a

599 The base is NYMM 16.174.6, cat. B 188 (IG I 1196), the stele NYMM 12.158, NMA 4808 (cat. G 34). Some authors consider Phaidimos the sculptor of Akr. 624 (cat. V 2), the Moschophoros (Boardman 1978, 74) though its base is unsigned. For an overview of all signed monuments the signature list (table 4); also Künstlerlexikon II, 208–9; Muller-Dufeu 2002, 151. One signature of his (ibid. no. 431) calls him Φαίδιμος.
base for a grave monument of a man called Antilochos (pl. 14c). After the sixth century, inscriptions move from grave stelai proper to the bases. Interestingly, the habit of inscribing the name of the deceased on the grave stele or relief itself returns in the late fifth century, when the space below the tympanon or on the lower frame is used.

The final quarter of the sixth century and the first quarter of the fifth are most prolific in terms of signatures (table 4, chart 4a): 21 survive on votive bases alone. Four signed votive bases from this period have an almost certain connection to extant marble sculptures, identifying the sculptor of the statue with certainty. On bases for grave monuments from the sixth century, seven signatures are preserved (table 4, pls. 15a–b). Two more are on grave stelai, and both of these name Aristokles as the maker (pl. 16a).

---


601  Statues are inscribed more commonly in the seventh century, e.g. the Mantikles Apollo or Nikandre.


603  Cat. V 80, Akr. 464 is connected to the base Akr. 9986, 6503 (cat. B 248, IG I 3 647). The inscription identifies Thebades son of [K]y[ρ]nos as the sculptor (Muller–Dufeu 2002, 216–7 no. 607). The horseman Akr. 571, cat. V 208 belongs to the base EM 6355, 6414, 6285 (cat. no. 66, IG I 3 642) and was made by Gorgias. The kore Akr. 681 stands on a pillar of the same inventory number (cat. V 11, B 197; IG I 3 628) and was by Antenor, son of Eumares. The Potter relief, signed by Endoios (Akr. 1332, cat. V 164) on the base EM 6520 and AM I 4571 (cat. B 70, IG I 3 764). The combined number is Akr. 13250. Cf. Keesling 2003, 210–4, for a detailed discussion of these votives. Two other connections are uncertain: EM 6241 (cat. B 3, IG I 3 683) with Akr. 693, a kore by Archermos of Chios dedicated by Iphidike; and EM 6242, Akr. 13850 (cat. B 5, IG I 3 641) with kore Akr. 611 (cat. V 64). For the attribution of cat. B 3 see AMA 118 no. 68, pl. 88, figs. 73a–b; Ridgway ASGS, 152; for cat. B 5 see DAA 7–8 no. 3; Ridgway ASGS, 131, 432 n. 10.4.

604  Cat. B 4, KM I 389, Xenophon base is linked to KM P 1051, a horseman; this monument and cat. B 11, KM I 190, Tymnes base, are both signed Aristokles (below n. 607); cat. B 17, NMA 12870, frs. of pillar of Nelon; and cat. B 126, EM 10643, base of Lampito, signed Endoios; cat. B 127, Third Ephoria M 662, base of Leanax, signed Philergos; cat. B 134, Third Ephoria, base of Oinanthe and Opsios (?), signed Aristokles; cat. B 266, EM 10638, Antidotos base signed Kallonides son of Deinios. Of cat. B 139, Athens whereabouts unknown, a signed base from 525–500, the inscription cannot be reconstructed.

605  Cat. G 112, KM P 1046 is a damaged fragment of a man’s stele; KM P 1265 (cat. G 113) is a fr. of a relief with a seated woman, of which only the lower part preserved. The inscription on a strip
The fragments are rather battered, and a better example survives on the lower part of a grave relief of a warrior from Velanideza, proclaiming it to be 'the work of Aristokles'.606 Below a horizontal line follows ἈΡΙΣΤΙΩΝΟΣ, which is sometimes interpreted as the patronymic and part of the signature, and sometimes as the name of the deceased. Two late sixth–century signatures from the Kerameikos bring the total of Aristokles’ signed sepulchral monuments from the city of Athens to four (pl. 16b–c).607

Of the signing sculptors of the sixth century, some appear more than once in the preserved material, and sometimes their existence and their work is corroborated by ancient authors. This is not the case for Gorgias.608 Had the number of signatures been the measure of status and success, he would have been very prominent among the sculptors of his time, the final decades of the sixth century: from Athens, six signed bases for his sculptures survive (table 4, signature list).609 Of the sculptors who left their names, he is the first to feature on bases for both bronze and marble statues in Athens. One of his works seems to be the Akropolis kore 611 (pl. 17a), if the attribution of the plinth with his inscribed signature to this statue is correct.610 In literature, on the other hand, Gorgias is sadly lost: it is not even entirely certain whether he was a native Athenian or not.611
In terms of extant signatures, Gorgias’ contemporary Pollias comes second (pl. 17b). The bases of three of his works from the last quarter of the sixth century are preserved well enough to reconstruct his name with reasonable certainty. Another possible signature of his dates to the early fifth century, on a base for a bronze statuette in the Epigraphic Museum. He too, worked in both bronze and marble and must have been successful to have his name survive as often as it has. Pollias, like Aristokles, seems quite unknown from ancient literary sources. Possibly, though not probably, he was the vase painter Euthymides’ father. If so, he wrote a treatise on symmetry, an early predecessor of the Kanon by Polykleitos.

Contrary to these sculptors, Endoios features quite often in literary testimonia and in inscriptions. A pupil of the legendary sculptor Daidalos, he is said to have followed his teacher to Crete after he was banished from Athens, although Endoios was born in that city. His best known statue (and perhaps the only preserved one) is the seated Athena on the Akropolis (pl. 17c). Pausanias further mentions a statue by his hand in Erythrai, which

---

612 Künstlerlexikon II, 269 (this is the sculptor known as Pollis, who may be a different person: cf. below n. 615); Muller–Dufeu 2002, 140–3: Pollias is listed as probably the father of Euphronios the vase-painter.

613 From c. 525–500 by Pollias: EM 6264, cat. B 220 (pl. 17b); EM 6279, 6270, cat. B149 (both for bronze votives) and EM 6502, cat. B 189 (for marble votive). EM 5161 (a), 6277 (b), cat. B 186 is attributed to Pollias based on similar lettering to other signatures of his (IG I3 664b; 727). DAA 221–2 no. 186; Kissas 2000, 131–2 no. 62.

614 Cat. B 243, EM 6265, IG I3 657.

615 Both Overbeck and Pollitt list a Pollis, but neither are certain of the exact period he worked in. This makes the identification problematic. See Plin. HN 34.91; Vitr. De arch. VII pr. 14. Cf. Overbeck, Schriftquellen 40 no. 2096, 41 no. 2098; Pollitt 1974, 233; Künstlerlexikon II, 269; Muller–Dufeu 2002, no. 397.

616 IG I3 663, cat. 150, Akr. 3767, 15595, 3768, no.?. Connection to the vase painter and the writer of the treatise, see Beazley 1944, 23–4 n. 1; DAA 168–9 no. 150, 522; Philipp 1968, 43; Jacob–Felsch 1969, 42 n. 133; Kissas 2000, 271–5 no. 56, figs. 351–6. Cf. Künstlerlexikon II, 276–87; Muller–Dufeu 2002, 392–411.

617 One of his extant signatures is on a pillar from a grave monument, cat. B 17, NMA 12870, which probably carried a kouros. The inscription is badly damaged and the reconstruction not entirely certain. Apart from this base for Nelson son of Nelonides, Endoios’ name is on two bases for reliefs: EM 10643 (cat. B 126; IG II1 1380) was erected to commemorate Lampito; cat. B 140, Akr. 13250, carried the Potter relief (cat. V 164, Akr. 1332). For comprehensive overviews of Endoios’ extant works, see e.g. Viviers 1992, 55–102, 153–74; Künstlerlexikon I, 204–5; Muller–Dufeu 2002, 142–5. Daidalos: Frontisi–Ducroux 1975; Künstlerlexikon I, s.v. Daidalos; Pollitt 1990, 13–8; Muller–Dufeu 2002, 25–41.

he claims was made of wood.\textsuperscript{619} Since all extant signatures of Endoios belong to marble statues, this seems unlikely; but Endoios may have had a talent for more than one material. One of his signatures – interestingly, an erasure – has the unusual addition \textit{kai tonde},\textsuperscript{620} which has fuelled much scholarly debate (pls. 18a–c). It has been interpreted as anything from a marketing ruse (\textit{yet another one by Endoios!}) to a simple listing of the facts, namely that he made two parts of the inscribed monument. The base in question is a top block of a pillar which once supported a kouros; base and statue were the grave monument of Nelon (or Neilon), the son of Nelonides, set up by the father after the son died. The letters of the inscription seem to have been carefully erased before it was built into the Themistoklean wall, but remains can still be deciphered:\textsuperscript{621}

\begin{quote}
'Ενδο[ιο]ς κ[αι] τ[ό]νδε ἐπιθέτην \\
παιδὸς Νέλονος Νελονίδος ἐστὶ τὸ σὲμα \\
α/ος χ'/υοί τὸ <πρ> α[γα][θοί] \\
(1) μνέμα ἐποίει χα- \\
ρέεθι
\end{quote}

The wording is more or less clear about the main events, but some aspects are ambiguous. When Nelon son of Nelonides died, his father ‘made’ a statue for him. This in itself is strange: unless Nelonides was a sculptor, the word should have been a Greek equivalent of ‘setting up’ rather than make.\textsuperscript{623} More curious is the use of \textit{tonde} instead of the far more common \textit{tode} in the signature. Had the neutrum been used, it would have referred to the monument,

\textsuperscript{619} Paus. 7.5.9; Muller–Dufeu 2002, 144–5 with no. 407.
\textsuperscript{620} Cat. B 17, NMA 12870; reconstruction of the inscription as in \textit{IG I}³ 1214.
\textsuperscript{621} Jeffery 1962, 127; Viviers 1992, 72–5. The first two authors agree that building the stone into the wall probably caused the rasura, e.g. because the inscribed face was visible and should be smoothed to avoid the appearance of sacrilege. Political reasons, for example, a link to the Peisistratids and a consequent destruction of the tomb and monument, is problematic for several reasons, as pointed out by Viviers 1992, 73–4.
\textsuperscript{622} Version \textit{IG I}³ 1214; also Muller–Dufeu 2002, 145 no. 409.
\textsuperscript{623} The use of the imperfectum is curious, but then again the metre is hardly faultless either. Cf. Friedländer 1948, 76–7 no. 69. An argument could be made for a lack of space, especially also in the signature. In that case the painting of the seated figure would have been included in the design from the start.
the *sema*. As it is, it can only refer to either a person (for example, the deceased or the patron) or to a masculinum such as *tupos* or *kouros*.  

But if *tonde* refers to the statue, why is this so emphatically ‘a work by Endoios, too’? Is the reader supposed to acknowledge other work done by Endoios, perhaps even for the same patron? An inscription on a work by Aristokles features a similar formula, and the fact that it occurs twice suggests that these ancient sculptors had few misgivings about advertising their skills. An interesting idea is that more monuments, or at least one more, by Endoios, presumably also for the family of Nelonides, stood nearby. The inscription pointed out the popularity of his work by bringing ‘yet another’ work by Endoios to the reader’s attention - in short, an advertisement. In a third explanation Endoios made the kouros but also painted the figure of a seated man on the left-hand side of the base’s front face. This figure would then have been in honour of the father, Nelonides, who died before the statue for his son was finished. In the two possibilities involving other work by Endoios for this family or standing nearby, the use of the masculine in the signature can hardly be explained. But if Nelonides was painted on the base after his untimely death, he could be the man whom *tonde* refers to. The aspirated *kai* in the epigram and the *kai* in the signature may then be linked: Endoios made the memorial as well as Nelonides’ portrait.

Endoios’ name once appears in a double signature inscribed in the flutes of a column, the second signatory being generally accepted as Philergos (pl. 18d). The discussion is summarised in Viviers 1992, 71–2.

Viviers 1992, 72. The *kai* in the epigram would in that case point to monuments this patron had had made on other occasions, while *kai* in the signature would refer to the other works by Endoios among those.

The piece is in the Third Ephoria: *IG I 3* 1229. In this inscription, the demonstrative is neutrum. Viviers suggests that the meaning is similar: the family had used Aristokles before and he was allowed to point this out in the inscription (Viviers 1992, 134–7).

Cf. Jeffery 1962, 127 no. 19; Willemsen 1972, 34–5; Ridgway ASGS, 294–5, who is in some respects doubtful about the interpretation. There is unfortunately no evidence that this suggestion might be right.


Considering the rather simplistic metre of the epigram, it is not impossible that the signature is metric too, forming the first half of a hexameter. The ‘nu’ could then have been added to make the syllable long.

Cat. 87, EM 6249. Version derived from *IG I 3* 763. Also Jacob–Felsch 1969, 161 no. 3; Viviers 1992, 77–84, with extensive references; Muller–Dufeu 2002, 146–7 no. 410. There is an association with a kore, Akr. 602 (cat. V 63), but this is very uncertain.
Although damaged, the column clearly shows the dedicatory inscription with on the left-hand side Philergos and on the right hand side Endoios. This formula is unusual: normally, the two names would have been combined and followed by \textit{epoiesaten}. Since a reconstruction of the complete monument is impossible, there is no telling whether the column had a capital, a capping block like the base of Nelon, or a simple top plate. There are no dowel holes for sculpture preserved, and it is difficult to determine any sculptural reasons for the double inscription. It seems unlikely that two statues were placed on the column, but it is possible. If the column carried one statue first, another one may have been added later and the sculptor of this piece signed the column, too. Two separate signatures, rather than two names with \textit{epoiesaten}, support this view. It must be noted, though, that unless the column was originally much larger than what is preserved, two names and \textit{epoiesaten} might not have fitted in one flute; so, the current construction may have been to avoid putting two names in different flutes and using a third just for the verb.

Philergos may well have been either a pupil of Endoios, or a master who worked under him in his workshop.\textsuperscript{631} If so, the monument may be the work of Philergos, but Endoios co-signed because he was the senior sculptor and his name would attract more status for the patron of the monument as well as new clients for the workshop. D. Viviers has shown that in antiquity, Endoios was thought to have been travelling much until he more or less settled in Athens.\textsuperscript{632} However, it should be noted that Philergos signed work in the final quarter of the sixth century (table 4, signature list),\textsuperscript{633} which suggests that he was already independent at the time. Endoios' other extant signatures date to the late sixth century too, and this double signature is his only one in the fifth century. However, it is dubious to base conclusions about Philergos' more junior status on the scanty evidence regarding their respective age. Viviers argues that Philergos, like Aristokles, was a next-generation student of Endoios, but this is

\begin{flushleft}
\textsuperscript{631} See Viviers 1992, especially 82–3 and 99–102; Ridgway ASGS, 288; \textit{Künstlerlexikon} II, 239; Muller-Dufeu 2002, 143.
\textsuperscript{632} His connection with the court of the Peisistratids (Viviers 1992, 101–2) is controversial. See below, ch. IV.
\textsuperscript{633} Cat. B 127, Third Ephoria M 662, base for a statue.
\end{flushleft}
also difficult to prove.\textsuperscript{634} It has often been noted in the debate about sculpture workshops that it is near impossible to identify educational relations between the Athenian sculptors of the sixth and fifth centuries.\textsuperscript{635}

Two more sculptors with preserved signatures from the last quarter of the sixth century are Pythis and Diopeithes. The former was probably also called Pytheas: he appears twice in the material (pl. 19a).\textsuperscript{636} A Pytheas mentioned by Pliny seems to have lived at a later time.\textsuperscript{637} Diopeithes occurs three times on bases for bronze votives and perhaps on one for a marble dedication.\textsuperscript{638} Three of these monuments are dated to the first quarter of the fifth century. No literary sources mention him, but another base with his signature is in Delphi.\textsuperscript{639} Contrary to those whose signatures are preserved more often, many sculptors with only one occurrence are mentioned by Pausanias, Pliny and other ancient authors.\textsuperscript{640} Bion is the most elusive of this group.\textsuperscript{641} According to Diogenes Laertius, there were two sculptors of that


\textsuperscript{635} E.g. Deyhle 1969, 2–3 (on stylistic grounds); Ridgway \textit{ASGS} 289–90, criticises Jeffery's attempt to link sculptors based on letter-cutters' hands. Jeffery argues that repeated similarities in lettering combined with the same artist's signature would show established links between letter-cutter's and workshops. One possibility she brought up is the connection between Phaidimos, Ariston and Aristokles with the letter-cutters known as masters A, B and C; while Ariston took over from Phaidimos and Aristokles from Ariston, letter-cutters C and E followed suit, taking over from A and B, who had worked a generation before (Jeffery 1962, 151, \textit{passim}).

\textsuperscript{636} Cat. B 90, EM 6266, 6463 once carried a bronze statue and was dedicated by a group of six patrons. The exact background of this dedication remains somewhat obscure. The signature of Pythis, also from c. 525–500 is cat. B 182, EM 6506. The base carried a marble statue of Athena, dedicated by Epitrite. See \textit{Künstlerlexikon} II, 338; Muller–Dufeu 2002, 206–7.


\textsuperscript{638} From 525–500: cat. B 107, EM 6360, 6452, 6493. From 500–475: cat. B 52, EM 6980; cat. B 106, EM 6246; cat. B 254, EM 6397, 6453. The signature on cat. B 52 is suggested by Raubitschek, and the inscription is very heavily restored: \textit{[– – μ'] ἄν} ἔθεκεν ἀπὸ τῆς ἀνθρώπων; \textit{[– – χ] ἔθεκεν Ἀθήνη ἄγαλμα}. This would be the only work by Diopeithes which carried a marble statue. Cf. \textit{DAA}, 488–90; \textit{Künstlerlexikon} I, 180; Muller–Dufeu 2002, 208–9 (who does not list this as one of Diopeithes' monuments).

\textsuperscript{639} \textit{FD} III.4, no. 4.179 (date c. 480 BC); Muller–Dufeu 2002, 208–9 no. 569.

\textsuperscript{640} As opposed to the signatures of sculptors from this period, completely unknown in the later history of art: Prothymos (Muller–Dufeu 2002, 261–7 no. 606), though the name is uncertain, on a fr. of a pillar for a bronze statue: cat. B 253, EM 6275 (a–c), 6429 (d–h). Hermippos (Muller–Dufeu 2002, 261–7 no. 604) also worked in bronze: base for a small group, cat. B 81, EM 6250 (pls. 23a–b). A signature of Nesioites may be on a base for a bronze statue, cat. B 84, Akr. 13262. Cf. below p. 160–30.

\textsuperscript{641} \textit{Künstlerlexikon} I, 116–7; Muller–Dufeu 2002, 158–61, although most items listed there belong to Bion of Miletus, probably a contemporary of the same name.
name, one from Miletos and the other from Chios or Klazomenae. The identification of Bion with a man whose name appears in a signature on the Akropolis remains uncertain, although the period is close. Antenor, son of Eumares, not only made the monumental kore named after him (pls. 19b–c), but also the original group of the Tyrannicides. The use of a patronymic is unusual for a sculptor’s signature: only three other examples survive, all from the last quarter of the sixth century. It is possible that Antenor’s full name indicates his higher status.

The last signing sculptor from the archaic period is Archermos of Chios (pl. 20a). According to Pliny, a sculptor by that name came from a rather colourful family of sculptors. First in the genealogy were Melas and his son Mikkiades, who are mentioned without further specifications. Mikkiades’ son was Archermos the elder, and his sons Bupalos and Athenis were famous in life and after death, if Pliny is to be believed. They reputedly made statues for sanctuaries, among other places on Delos, and in one inscription presented themselves as ‘the best Chios had to offer next to her wine’. It is interesting that sculptors from the middle of the sixth century would sing their own praises so loudly. They were, after all, hired by others to make the work that they eulogised. Moreover, these dedications were intended for a religious context which is often presumed to have been restrictive towards such displays

642 Diog. Laert. 8.58; Schriftquellen 65 nos. 362–3; DAA, 487–8; Muller-Dufeu 2002, 159.
643 EM 6306, 5526, 6423, cat. B 237; cf. previous note.
644 Akr. 681, cat. V 11; for Antenor cf. Künstlerlexikon I, 48–9; Muller-Dufeu 2002, 201–5. The Tyrannicides (Paus. 1.8.5; Schriftquellen 84–5 nos. 443–7; DAA, 481–3; Pollitt 1990, 41–2) are not in the dataset, because they are a dedication by the polis, i.e. public. They will be discussed below, n. 672. For further references see Wycherly 1957, 96–8 nos. 270, 280; Brunnsäker 1971, passim; for accounts by ancient authors, Pollitt 1990, 1990, 243.
646 Cat. B 3, EM 6241: base for unspecified statue, c. 525–500. This is one of the three ethnica in signatures which survives; the others are Akr. 6962, cat. B 9; and Akr. 13639, cat. B 286: both refer to sculptors from Chios, but due to damage no further identification is possible. Cf. DAA, 484–7; Künstlerlexikon I, 76–7; Muller-Dufeu 2002, 123–7 nos. 337–47 (for the entire family).
648 Schriftquellen nos. 314–5; Pollitt 1990, 28–9; Muller-Dufeu 2002, 123–7, in particular no. 337.
of self-aggrandisement. In Pliny’s account, Bupalos and Athenis worked around 540 BC but the Athenian signature of Archermos dates from the last quarter of the sixth century, so it is doubtful if it is their father’s. It is plausible that this Archermos was a grandson of the one Pliny mentions and who features in an inscription from Delos: yet another generation in the Chiot sculpture dynasty.

After the turn from the sixth to the fifth century, the number of signatures falls along with the totals of bases and sculpture (table 4). The distribution of signatures over votives and gravestones in the fifth century is quite different from the previous century. Notable is their absence on sepulchral bases from the first quarter of the fifth century, while the last quarter of the sixth had produced six (chart 4a). After this, only few votive bases are signed. Among the scarce dedications with a signature are a marble votive stele and plaque from the Athenian Akropolis: it was dedicated by Habronichos in the first quarter of the fifth century, and Kallon is generally considered the sculptor.

Two further bases from this period are signed by Kallon. One of them is interpreted as Kalon Aignetes (pl. 20b), but none of the letters of the ethnic actually remain; rather, the reconstruction is based on Pausanias’ descriptions of the work of Kallon of Aegina, pupil of Tektaios and Angelion, who in their turn learned their craft from the famed sculptors Dipoinos and Skyllis. Pollitt suggests this sculptor might be the same man

---

649 They were mentioned in the work of Hipponax, who according to Pliny (HN 36.11) lived c. 532 BC.
650 Cf. above n. 647. The base for the Nike statue from Delos NMA 29 is emphatically inscribed by Mikkiaides and Archermos, who are also the dedicators, commenting on the daring design of the statue. Scherrer 1983, 25 suggests that base and statue could only be so innovative (cf. Jacob–Felsch 1969, 39, 160 no. 2) because sculptors and patrons are the same. Cf. Künstlerlexikon I, 76–7; Muller–Dufeu 2002, 122–7.
651 Sculptors’ names occurring only once in this period are: Eleutheros (fr. of capital, Akr. 150, EM 6248, cat. B 49; perhaps associated with kore Akr. 429: pl. 23d; Muller–Dufeu 2002, 261–7 no. 602); Xenaios son of Arthmonides (fr. of base for bronze statuette, EM 6268, cat. B 80); Stibeon, frs. of a pillar for a bronze statue: cat. B 212, EM 6403a (a), 6403 (b), 6494 (c), 6495 (d). These signatures are damaged and therefore uncertain.
653 Cat. V 333, EM 5529. The evidence for the reconstruction of the signature is, however, insubstantial, because of the poorly preserved inscription: DAA, 508–9; IG I 797; IG I 749.
655 Paus. 2.32.5; Pollitt 1990, 34; Künstlerlexikon I, 397–9; Muller–Dufeu 2002, 186–7.
656 Paus. 2.32.5. Dipoinos and Skyllis were ‘the first to win fame in the carving of marble’ (Plin. HN 36.9; Muller–Dufeu 2002, 125–9, 137–9). This was supposedly in the 50th Olympiad or c. 580 BC.
as Kallon of Elis, an artist working in Olympia in the beginning of the fifth century.\textsuperscript{657} If this is correct, the sculptor appearing in Athenian inscriptions could be identified with the Kallon in Pausanias. However, Pausanias did not link the Elian and the Aeginetan. The only clue which could confirm the identification lies in the statues by the two Kallons. One of the bases in Athens carried a group, probably a bronze chariot with horses and a bronze statue.\textsuperscript{658} The monument in Olympia mentioned by Pausanias commemorated a group of children from Rhegion who were killed in a shipwreck on their way to a choreic festival in Olympia.\textsuperscript{659} The children, their trainer and the flute-player who accompanied them were portrayed in the bronze figures. According to Pausanias, it was highly appreciated in antiquity.\textsuperscript{660} In any case, though the genre of the two monuments is similar, an identification of the two Kallons remains elusive.

Some sculptors’ careers extended from the late sixth century into the fifth, such as, for example, those of Pollias and Diopeithes. Newcomers with several preserved signatures from this period are Euenor, Philon and the duo Kritios and Nesiotes.\textsuperscript{661} The latter two seem to have had their most productive period in the second quarter of the fifth century and will be discussed below. Philon and Euenor only occur in inscriptions from the first quarter of the fifth century. Philon’s name is preserved on two columns, one of which probably carried a kore and the other the pedestal of a basin (pl. 20c).\textsuperscript{662} It is the only example in the database of a sculptor’s signature on a support for a basin. Euenor left four signatures among the Akropolis material in this study, two of which are linked to preserved statues, for example

\begin{itemize}
  \item Since Kallon succeeded them by two generations, a date between 550 and 520 BC would be feasible. Kallon’s signatures from Athens both date at least twenty years later. This is only possible if Kalon came to Athens quite late in his career.
  \item Künstlerlexikon II, 395; Muller–Dufeu 2002, 438–41.
  \item Cat. B 85, EM 6256, 6256a–d.
  \item Cat. B 85, EM 6256, 6256a–d.
  \item Paus. 5.25.2–4, 5.27.8; \textit{Schriftquellen} 88–9 no. 475; Pollitt 1990, 35; Muller–Dufeu 2002, 440–1, no. 1289.
  \item One eulogist was Hippias, sophist and poet from the second half of the fifth century.
  \item From 525–500, a low base for bronze from the Akropolis (inv. no. ?; DAA 89–90 no. 84) shows Nesiotes’ name. Although \textit{epoiesen} is missing, and no other preserved bases signed Kritos or Nesiotes date before 500, it must be a signature, for the patron’s name is inscribed too: Alkibios \textit{kitharoidos}. More than one patron seems unlikely for such a votive, which may have been a prize for a contest.
  \item Cat B 37, Akr. 6976; cat. B 36, EM 6267 for the basin. See \textit{Künstlerlexikon} II, 245; Muller–Dufeu 2002, 208–9.
\end{itemize}
the column for the kore Akr. 497 (pl. 21a).\textsuperscript{663} As in Philon’s case, all occurrences of Euenor’s name collected here refer to marble statues. Neither sculptor is known from classical texts.\textsuperscript{664}

Two sculptors who appear in preserved inscriptions and in ancient literature are Hegias and Onatas. The former (pl. 21b) was believed to have taught Pheidias in Roman literature,\textsuperscript{665} yet the Romans seem to have had little appreciation for his work.\textsuperscript{666} Onatas is said to be the son of a man named Mikon from Aegina.\textsuperscript{667} Quite a few signed bases for his work, mostly bronze, are preserved in sanctuaries in various places (pls. 22a–b).\textsuperscript{668} Notwithstanding the frequency of his signature, Pausanias is quite disparaging about Onatas’ style, which he describes as inferior to the Attic school and Egyptian–looking. Apparently, however, Onatas’ contemporaries disagreed with Pausanias.

After the first quarter of the fifth century, numbers of preserved signatures dwindle. From the second quarter, nine inscribed artists’ names survive, but by the last quarter the total has dropped to two (table 4).\textsuperscript{669} All signatures from the last three quarters of the fifth century are inscribed on bases, and all are dedicatory. In the first quarter of the fifth century, Philon and Euenor are well–represented in signatures, but from the rest of the century only three sculptors have more than one preserved signature. The higher survival rate of signatures from the earlier fifth century is likely to be influenced by the Persian debris. Two sculptors whose bases survive among the debris are Kritios and Nesiotes. Their signature appears six times on bases for votives: one dates to the first quarter of the fifth century (pls.

\begin{itemize}
\item \textsuperscript{663} Cat B 23, Akr. 9744 for kore Akr. 497 (cat. V 188); cat. B 22, Akr. 9746 is linked to the Athena cat. V 61, Akr. 140. Cat. B 283, Akr. Mag. 13782 does not have a preserved statue; cat. B 14, Akr. 3763, for a marble statue. Künstlerlexikon I, 222–3; Muller–Dufeu 2002, 208–9.
\item \textsuperscript{664} It is interesting that three of Euenor’s works were preserved well enough to tell us the name of the patron; yet more suggestive is the fact that Angelitos apparently ordered from Euenor at least twice: cat. B 22 and cat. B 283 have a link to the latter, while cat. B 14 was dedicated by a man called Kiron. Cf. below n. 1055.
\item \textsuperscript{665} Dio Chrys. Or. 55.1; also Schriftquellen 85–6 nos. 452–6; DAA, 504–6; Pollitt 1990, 35, 37, 222.
\item \textsuperscript{666} EM 6299 (a–c), 6247 (d), cat. B 94 (base for bronze statue from c. 500–475). Notwithstanding Pliny’s low opinion of Hegias, his works stood in several Roman cities (cf. Plin. HN 34.78). Cf. Muller–Dufeu 2002, 204–7.
\item \textsuperscript{667} Paus. 8.42.1–13; cf. DAA, 520–2; Muller–Dufeu 2002, 186–93; Dörig 1977.
\item \textsuperscript{668} Cat. B 236, EM 6263: fr. of a pillar for a bronze statuette. Cf. Paus 8.42.1–13, 5.25.12, 5.27.8, 10.13.10; also Conze, AG no. 9.238; Schriftquellen 79–82, nos. 421–8, 97 no. 524; Pollitt 1990, 36–9, 46, 227.
\item \textsuperscript{669} Besides the work of Kritios and Nesiotes, bronze votives from c. 475–450: cat. B 117, EM 6273, whose damaged signature is [-----]. Of cat. B 19, EM 12851, the signature refers to someone from Paros.
\end{itemize}
while the others come from the second quarter. The duo was famous in Antiquity for their 477 BC replacement group of the Tyrannicides after the Persian Wars, and many sculptors were considered their pupils. Details about either are, however, scarce in ancient literature. Kritios is called Attic in one case, but it is not certain whether he was born an Athenian.

A contemporary of Kritios and Nesiotes was Euphron, of whose work in Athens two signed bases for votive stele or pillars remain. The only other fifth-century sculptor with more than one preserved signature is Kresilas. His career flourished shortly after the middle of the century. He seems to have been originally from Kydonia on Crete, and is well known for his portrait of Perikles and his participation in the legendary Ephesian sculpture contest alongside Pheidias, Polykleitos, Kydon and Phradmon. Three bases in the record bear his signature, all from the Akropolis: two of these are for bronze votive statues. Of the third signed base, the date, dowels and proportions indicate that it may have supported a dying man in bronze, which is described by Pliny and Pausanias as Kresilas’ work.

---

670 Cat. B 160, Akr. 13270.
672 Paus. I.8.5; Luc. Philops. 18. Cf. also Schriftquellen, 84 no. 443, 85–6 nos. 452–3 and 457–63, 88 no. 469 and 162 no. 900; DAA, 513–7; Pollitt 1990, 43; Muller–Dufeu 2002, 210–1 no. 576.
673 Paus. VI.3.5; Plin. HN 34.85; Schriftquellen 87 nos. 463, 469; Muller–Dufeu 2002, 212–7.
674 Paus. VI.3.5; Schriftquellen 87 no. 463; Künstlerlexikon I 431; Muller–Dufeu 2002, 213 no. 590; cf. 460–1 no. 1332, 848–9 no. 2542.
678 Cat. B 132, Akr. 13201 dates c. 450–425 (IG I 883). The dedicant was Hermolykos son of Dietreiphe; the recipient deity is unknown, but Dietreiphe was a strategos in the Peloponnesian War (Th. VII.29). Cf. Richter SSC2 179–80, 231, n. 129; Pollitt 1990, 69; Muller–Dufeu 2002, 372–3 no. 1074.
Between the second quarter and the end of the fifth century, Athenian sculpture signatures provide the names of four artists. From the third quarter of the fifth century are those of Kalamis and Lykios; to the last quarter date the signatures of Apollodoros and Strongylion. Lykios was the son of Myron of Eleutherai, the sculptor of the famous Diskobolos. The son must have been successful too, for he made a dedication for three hipparchoi in Athens, and Pausanias describes work of his in Athens and Olympia. Probably another Athenian was Kalamis. His only signature in Athens is on a votive base, but ancient texts describe a number of his works in other cities. From the frequency with which he is mentioned, his standing appears to have been high, at least later in antiquity. Although evidence for the appreciation of his contemporaries is lacking, he received a prestigious commission in the Aphrodite Sosandra or Saviour. According to Pausanias, this statue was dedicated by Kallias after he had been able to pay part of a large fine for his father-in-law, Miltiades. Another one of his statues was set up by Kallias in front of the temple of Apollo Patroos in the Agora commemorating the end of the plague around 420.

Apollodoros and Strongylion are the last two sculptors whose names appear among the signatures in this study. Both signed their works in the last quarter of the fifth century.

---

679 Cat. B 135 (Akr. no.? ) signed Lykios of Eleutherai, son of Myron. Cat. B 136, AM I 5128 may be by Kalamis. Künstlerlexikon I, 373–82; Muller–Dufeu 2002, 242–3 (Kalamis), 368–9 (Lykios), 376–7 (Strongylion); for the latter see also Corsa 2004, 55–75.


682 AM I 5128, cat. B 136. Pausanias mentions an Asklepios in Sikyon (Paus. 2.10.3), a Hermes in Tanagra (Paus. 9.22.1), bronzes in Olympia (some made together with Onatas, Paus. 6.12.1: for the city of Akragas (Paus. 5.25.5) and a Nike for the Mantineians (Paus. 5.26.6); Strabo describes an Apollo in Apollonia on the Black Sea (Strabo 7.6.1). Also Muller–Dufeu 2002, 244–9.

683 See e.g. Schriftquellen 77 no. 409, 79 no. 420, 95 nos. 508–32, 142 nos. 795–6, 154 no. 857, 1155; also Pollitt 1990, 46–8, 223, 224.

684 Paus. 1.23.2, Luc. Im. 4–6; Muller–Dufeu 2002, 244–7 nos. 687–91.

685 For the story of Kallias and Miltiades see Hdt. 6.136; Plu. Cim. 4.

686 Paus. 1.3.4 describes this statue as an Apollo Alexikakos. The year 420 BC. is somewhat late for Kalamis the elder: maybe the occasion was an earlier plague, in which case Kalamis the elder is meant. Otherwise, the statue was put up after the epidemic had ended. The sculptor would then be by Kalamis the younger.

687 EM 6297, cat. B 146 by Apollodoros dates c. 425–400, as does Akr. 13264, cat. 176, a base for a bronze horse, possibly the Trojan Horse, dedicated by a Chairedemos son of Euangelos of Koile.
An Apollodoros can be found in Pliny, but unless the author made a mistake it is impossible that the fifth-century sculptor is the artist he mentions, for he was a pupil of the fourth-century sculptor Praxiteles. According to Pausanias, Strongylion specialised in cattle and horses: he made a Trojan Horse, probably for the sanctuary of Artemis Brauronia on the Akropolis. Ancient texts also mention an Artemis and a boy among his works, some of them apparently in bronze. Strongylion was a favourite in Roman times: the statue of a boy, thought to be by his hand, was appreciated so much by Brutus that it provoked comments from Martial.

The most prolific period of signatures by far is the last quarter of the sixth century (table 4): 28 signatures by at least 16 sculptors exceed any other quarter century under consideration. Second in importance is the beginning of the fifth century, with 21 signatures by at least 10 different sculptors. In view of the peak of votive and to a lesser extent of sepulchral sculpture from Athens, it is not surprising that most extant signatures are from around the turn of the century. In the second quarter of the fifth century, the number drops to nine signatures, which in view of the paucity of material from this time is considerable. If the votives in question were set up early in the second quarter, they ended up in the Persian debris, ensuring their preservation. The relative wealth of signatures from the second quarter of the fifth century can thus be explained, but it is noteworthy that their numbers exceed those of votive sculpture. First, this shows once more that votive sculpture was made in the second quarter of the fifth century; and second, that the corresponding votive bases had a better chance of survival in the debris than sculpture.

An interesting aspect of the signatures is that in periods when the total number of signed sculptors exceeds ten, i.e. in the final quarter of the sixth century and the first quarter

---

688 Plin. \textit{HN} 36.81, 86; \textit{Schriftenquellen}, 259 no. 1359, 260 no. 1364; \textit{Künstlerlexikon} II, 65; Muller–Dufeu 2002, 368–9, 548–9 no. 1612 (whom she considers a fourth-century, and so different person). Cf. above n. 679.

689 Paus. 9.30.1 on the specialisation; for the Trojan Horse cf. Akr. 13264, cat. B 176; also \textit{DAA} 208–9 no. 176; \textit{Künstlerlexikon} II, 426–7, Muller–Dufeu 2002, 379 no. 1096.

690 Plin. \textit{HN} 34.82, Paus. 1.40.2–3 and 1.44.4; see also Pollitt 1990, 71–3; Muller–Dufeu 376–81, no. 1085–1101.

691 Plin. \textit{HN} 34.81–2; Mart. 14.171; cf. 2.77, 9.50; Muller–Dufeu 2002, 378–9, no. 1092.

692 These nine are divided over two sculptors and a sculpture duo, Kritios and Nesiotes (table 4). Of the other two signatures little remains, and the sculptor cannot be identified. The ethnic is preserved once, and may have belonged to a sculptor in the record. Because of this, it was left out of the sculptor count.
of the fifth, they are also more likely to have four or more signatures preserved. After the early fifth century, not only the total number of signatures falls, but numbers of extant signatures per sculptor do so as well. Although the numbers are very low to draw any conclusion from, it is interesting to compare this situation with the archaic period: Aristion is the only sculptor preserved in signatures in the third quarter of the sixth century, but his name appears twice in the meagre record. At the end of the fifth century, all surviving sculptors' names occur once; but on the other hand, their chances of survival through ancient literature were much better than those of the sixth-century sculptors.

After the first quarter of the fifth century, no grave monuments have signatures anymore. The last one is by Philergos on a base for a funerary statue. Philergos and Endoios in the last quarter of the sixth century are the only two sculptors to have signed work preserved from both votive and funerary contexts.693 This suggests that sculptors often worked in one of the branches rather than in both, though again, the small amount of preserved evidence calls for caution. Similarly, some sculptors appear to have specialised in bronze or marble. After the first quarter of the fifth century, sculptors signing bases for bronze sculpture become a separate group from those signing marble. Although ancient texts show that not all sculptors in this period only worked in one material – think of Pheidias and Polykleitos – the evidence on the whole shows a move towards specialisation of material in the fifth century. For in the sixth century, quite some sculptors had worked in both materials, as signatures attest to: Gorgias, Pollias, possibly Diopeithes and Pythis. Sculptors who worked in bronze as well as in marble seem to have been more common than those who produced both votives and gravestones, or so the evidence suggests. Signatures also show that some sculptors were quite versatile in genre: Kalon’s work ranges from a marble stele to bronze groups, and Philon apparently made basins as well as statues. Ancient authors confirm that this was quite common, although some sculptors were famous for one genre in particular, like Strongylion for cattle.694

There seem to be no ancient authors who describe classical sculptors to be famous for reliefs. And interestingly, among the large number of preserved reliefs of the second half of the fifth century, not one has a signature.695 In the sixth century, this had been different:

693 As noted by Ridgway ASGS 292–3. See below n. 752 and signature list (table 4).
694 See above n. 689.
695 Signed bases for stelai or reliefs disappear in the fifth century, along with bases for marble statuary in general in that period. Signatures on bases for votive statuary from the second half of
some stelai are signed, and bases for stelai have signatures as well. There are two possible explanations for this. First, sculptors may have refrained from signing their reliefs in the later fifth century. Second, there may have been practical problems. The fifth-century reliefs may have had bases which were inscribed with the sculptor's name; but that not one of these would survive remains a problem. Reliefs proper were no longer signed, because the available space was used for the patron's inscription. With the dwindling number of bases, for example, because reliefs were fastened to walls of periboloi or sanctuaries, little room was left for signatures.\textsuperscript{696} Notwithstanding the above, seven signatures from the second half of the fifth century are preserved. All are, however, on bases which carried statues, and all but one are for bronzes (table 4, chart 4b). Apparently, in certain quarters of the sculpture trade signatures were still a common feature: votive statues, and preferably in bronze.\textsuperscript{697}

For the sculptors, this dwindling of signatures must have had consequences. Many could no longer gain a reputation by putting their names on their work, and they must have relied on other mechanisms for publicity. Of those who obtained major monumental commissions, some signatures still appear at the end of the fifth century. Good examples of this (though from literary rather than archaeological sources) are the chryselephantine Zeus and Athena Parthenos by Pheidias.\textsuperscript{697} The material evidence of the latter's activity in private sculpture at Athens is minimal; but it is certain that he worked in the city, and his lost signatures deserve some attention. According to legend, Pheidias had his own means of establishing his authorship: the alleged portrait in the amazonomachy on the shield of the Athena Parthenos would have worked.\textsuperscript{698} It has also been assumed that he signed the

---

\textsuperscript{696} This use of \textit{peribolos} walls was investigated by Dr. Jan Breder of the University of Bonn. I thank prof. Marion Meyer for bringing his dissertation to my attention. For votives cf. Van Straten 1992, 259. Reliefs could also be placed in slots cut out of the bedrock, like those still visible between the Parthenon and the Propylaia.


\textsuperscript{698} Paus. 2.43.4; 8.53.8.
Olympian Zeus in a location not immediately visible—under the god’s partly raised foot. However, Pausanias relates that Pheidias was allowed to sign the column of the Athena Parthenos on which her arm rested. Whether this is true or not, in cult statues a sculptor’s modesty was deemed appropriate. That Pheidias nonetheless tried to get his signature in suggests that such wishes must have existed, or the issue would never have arisen.

The question is whether less prominent Athenian sculptors had similar expectations. Is the fact that none of the small reliefs from the later fifth century are signed an indication that lesser sculptors were not allowed to do so? Or that they did not care? The material seems to suggest the latter. It is understandable that signatures were most desirable on major commissions, whether the reasons were honour, publicity or something else. Thus, more complex bronzes continue to be signed, while in other categories of sculpture it is no longer done. The decline of large-scale stone sculpture in the round fits in with this view: fewer marble monuments worth the signature were being made. Moreover, large bases offer more than enough space for signatures, but the edges of a relief are quickly filled with the names of the patron or the deceased, or both. Nonetheless, sculptors could have signed on the side faces or the reverse, which according to the material studied here, they did not. Even on monumental gravestones like the Hegeso relief, where there was ample room and the reverse could have been used, there is no signature. In short, signing became the domain of votive sculpture in the round, in particular bronzes.

Such practical reasons aside, patrons must have had an influence on what was signed and where. Smaller votive reliefs, of which many were set up close together and some perhaps hung or erected in slots in the ground, without bases, would have offered little room for signatures. In any case the inscriptions would have been very small. On bases for large bronze sculpture, signing was effective (as it had been in archaic times) for sculptor and patron: their reputations were mutually enhanced. Since there was room for a large inscription, the signature was visible for passers-by. From a practical and perhaps a social point of view, this was advantageous to all involved. Those who refrained from signing may have belonged to a different branche in the sculpture world: not the Strongylions or the

---

699 Donderer 1996, 92–3; 2007 passim. In the former case the signature was ‘underneath the feet’, according to Pausanias (5.10.2). Cf. Donderer 2007, 25–6.
700 Plu. Per. 13.9. In another version he was not allowed to sign: cf. Cic. Tusc. I.15.34
Apollodoroi, whose grand bronzes warranted signatures. These were the many sculptors who made marble reliefs, sometimes of excellent, sometimes of rather poor technical quality, who fed the growing Athenian market for sculpture. Whatever their rank in the sculptural hierarchy may have been, there is no indication that they signed their work.

4 THE SCULPTURE SHOP

South-west of the Athenian Agora lay in classical times what is now known as the Residential–Industrial District (map 15), in which a remarkable collection of houses and workshops survives. The evidence from the latter can provide invaluable insight in the day-to-day activities of the sculpture trade. This section presents the evidence of workshops in this and some other parts of the city of Athens. The corresponding activities of sculptors, and more importantly, of the support personnel in the art world, will follow in the next section.

Since built structures or installations are expendable when making sculpture (to this day sculptors work on the renovation of the Parthenon out-of-doors), it is not surprising that rather few marble workshops were found in Greece. However, although this is the case for the archaic period, some workshops from the classical period are preserved. Since marble was definitely carved in Athens in the sixth century too, the fact that the workshops where this happened are missing from the archaeological record needs some explaining. For one, sculptors may not have used fixed workshops before the fifth century. Since they travelled around, a built workshop would have been impractical. Second, they may have been destroyed, for example in the Persian wars. If built workshops were in use for a longer consecutive period, however, marble chips and dust should still have been found. Three, the workshops may be in an as yet unexcavated location.

Had there been no workshops dating to the fifth century, one could easily have concluded that sculptors simply did not use built workshops in archaic times; but workshops from the fifth and fourth centuries are quite numerous. Most prominent in the Athenian excavation records is the house of Mikion and Menon,702 built in the second quarter of the fifth century on a large fill which was put in to level the terrain. It lies just north of the

Residential–Industrial District, across the road from the west end of the South Stoa (map 16a).\textsuperscript{703} Mikion is considered the earlier of the two sculptors. He is presumed to have worked in the shop immediately after its construction in the second quarter of the fifth century. His name is preserved in a \textit{fecit} inscription on a bone stylus found on the site (pl. 23c).\textsuperscript{704} Menon must have been the last sculptor to work in this house, according to the date of some graffiti on pottery in the early third century BC.\textsuperscript{705} Though both names are handed down by the household objects of the workshop, professionally Mikion does not survive: he has no signatures in the record, nor, it appears, in other epigraphic or literary sources.\textsuperscript{706}

The size of the plot of this house changed relatively little for as long as it was in use.\textsuperscript{707} The south–east wall of the building which faced the street showed a construction of dressed polygonal limestone to a height of about half a metre and mudbrick further up. On the outside of the building, the blocks were ‘\textit{left to protrude irregularly}’,\textsuperscript{708} while on the inside they were carefully smoothed to an evenly dressed surface; most of the other walls of the house were less meticulously worked, or so the remaining stretches indicate. The rooms were spaced around a courtyard (room 3, map 17a). The excavators thought that room 8 was the actual workshop, because of thick layers of marble chips and dust in every stratum.\textsuperscript{709} Further conclusions on the layout are hampered by later building activity which disturbed the lower layers. However, the remains show that some of the rooms were split up over time.

\textsuperscript{704} AM BI 819: Lawton 2006, 17–8 fig. 16. The remaining inscription was \textit{O MIKION EIIOI}, with part of the first omikron worn or broken off, and the last part of the phrase omitted. It was found in the lowest level of room 8, which Shear supposed to be the main work area of the building (Shear 1969, 389, pl. 102b).
\textsuperscript{705} Two kantharoi found in the Demeter cistern inside the house: AM P 897 (Shear 1969, 390; Lawton 2006 19 fig. 17); AM P 898, (Shear 1969, pl. 102c). Cf. Miller 1974, 194 n. 2. Ibid. for fragmented pottery of Menon’s time.
\textsuperscript{706} Stewart 1990, 33 notes that a Menon worked with Pheidias. He corroborated the charge of embezzlement. That this Menon would be an ancestor of the sculptor who was the last to work in the workshop cannot be proved. The absence of signatures of a sculptor by either name from the fifth–century material can mean two things: either family names were less consistent than Stewart presumes and among and sculptors with different names worked here, or (above, p. 168) this family rarely signed their work.
\textsuperscript{707} Shear 1969, 384–5. For the pottery found in the fill (late sixth century to early fifth), ibid. n. 4. Miller discusses the most recent pottery and a coroplasts’ dump (presumably from a neighbouring workshop) found in two cisterns in the house from the late fourth to early third c. BC (Miller 1974, 198–9, 209–10; 228–9; \textit{passim}).
\textsuperscript{709} See above n. 704.
First, room 5 was separated from 7, and rooms 8, 9 and 10 were partitioned around approximately 420 BC.\footnote{Shear 1969, 386; for the date in particular ns. 5–6.} In the second quarter of the fourth century, the house was renovated and the courtyard was given a different shape. In the process, room 4, which had been a shop separate from the house (judging from the absence of a connection), was demolished.\footnote{Ibid. 388, for the dates ns. 9–10. Cf. the dotted lines in map 16a.} The building was probably refurbished or extended every other generation in the fifth and fourth centuries, though the plot was not extended in any considerable way. The first remodelling resulted in more and smaller rooms, while later the shape of the courtyard was altered and a room, possibly another shop, was added (number 6, map 16a), leaving the partitioned space of previous refurbishments intact. A well was dug out into one of the small cisterns operating in the final phase, providing water for the inhabitants of the house and possibly for the work (notably smoothing and polishing of the marble) and datable pottery and terracotta figurines to the excavators.\footnote{The figurines were not considered an indication that the workshop had switched to terracotta: firstly, the marble chips continued in the contemporary layers in room 8, and secondly the debris may well have come from a coroplast’s workshop in a badly preserved building to the West and North (Shear 1969, 393).} For the almost two centuries during which it was in use, its occupants always seem to have been marble workers: every subsequent layer contained the marble chips characteristic of the trade, and a few unfinished pieces from various periods were discovered in the house and its cisterns.\footnote{Shear 1969, 389. Two trial or training pieces from the fourth century are AM S 195, of a seated female figure, and AM S 201, a relief in the first stages. See also pl. 23e and Lawton 2006, 18–9 and figs. 18–9.}

South of the house of Mikion and Menon, past the crossing of the Street of the Marble Workers and the street leading to the Piraeus gate, several houses and workshops were built between the second quarter and the end of the fifth century (map 15).\footnote{Young 1951, 187–252. Cf. Camp 1986, 142. Reports on other excavated houses in Athens from archaic to hellenistic times, e.g. Thompson 1959; Lauter–Bufe and Lauter, AM 86 (1971), 109–24; Shear 1971 and 1973; Thompson and Wycherley 1972; Nevett 1995; Parlama and Stampolidis 2000, passim; Brouskari 2002, 44–55.} These lay in the valley west of the Areopagos, in the Residential–Industrial District where at least five different buildings had one or more rooms with traces of marble working from some time in the fifth or fourth century.\footnote{Young 1951, passim; Boersma 1970, 250–3 no. 151; Zimmer 1999, 468; id. 2006, passim.} A few, like the north–west room of the so–called Poros Building (map 15) or the courtyard of house D (maps 17a–b) served as marble workshops only briefly,
because they had been built for other purposes, or because the trade which was plied there changed.\footnote{Young 1951, 179–81: the north-eastern annex to the poros building was used as a marble workshop between the end of the fifth century and the middle of the fourth; cf. Börner 1996, 98–9; Young 1951, 222: house D. Here, some marble working was only practised in the second period, after the south branch of the Great Drain had been built in the early years of the fourth century, while the main activity was forging iron and bronze.} Others were used to make sculpture in for longer.

According to the excavator R. S. Young, house G, west of the Street of the Marble Workers, was used as a sculpture workshop and dwelling in the second half of the fifth century; admittedly, firm evidence of the manufacture of sculpture dates in this case to the first decade of the fourth century.\footnote{Young 1951, 234–6. The western part of the house is lost due to later Byzantine construction; this is also the reason for the lack of datable material.} Across the street to the east was a workshop in which troughs were built along the inner walls (house F, maps 15, 16b). Large numbers of animal bones were discovered in a pit just outside.\footnote{Young 1951, 229–33: ‘...We uncovered a bit of the Greek floor level at its northern edge; it was a characteristic marble chip fill floor, with enough marble dust to indicate that it had been formed on the spot by the working of marble, and that the house was probably another shop where marble was worked.’} North of house F lay another workshop, house H. It is poorly preserved, and the only certain thing about it is its use by marble workers.\footnote{Young 1951, 161–5. House G was expanded: new troughs were put in approximately where the old walls had been.}

Immediately east of the complex of houses H, F, E and D from north to south, ran the south branch of the great drain, built in the early years of the fourth century BC. Before then, there had been an open channel, along which ran a path connecting the Agora with the south side of the city. The Street of the Marble Workers forked just south of the bridge at Piraeus street, on a small open square south of house G. Its eastern branch all but disappeared when the drain was built in the early fourth century, while some of the house owners along the street took the opportunity to move their walls out, founding them on the retaining walls of the new drain.\footnote{Young 1951, 147 (though undated) and 164.} At the same time, the northern part of the Street of the Marble Workers was cut off from the Agora proper (at least for carts) by a small flight of steps; possibly the same was done at the so-called Areopagos Street running east of the Street of the Marble Workers (map 15).\footnote{See the following page, 172 for a description of this pit.} Both of them still could function as thoroughfares for traffic, although carts could now only drive up to Piraeus street near the house of Mikion and Menon.
House K, built in the second half of the fifth century, lay south of the Poros building and adjoined the later drain on the east side (map 15). It was used in the first half of the fourth century as a marble workshop: marble chips were found in the north–east room, while two southern rooms which were broken through early in the fourth century served as storage for large quantities of carving debris.\textsuperscript{722}

The district must have been bustling with all kinds of crafts in the late fifth century. Apart from marble workshops, the excavators found evidence of one or more smithies, two coroplasts’ shops (one probably from Hellenistic times) and several shops or workshops of which the function is less obvious.\textsuperscript{723} Particularly tantalising is the craft practised in house F (map 16b). The material from its premises contains a large quantity of the knobby ends of bones as well as some sawn–off straight pieces, so bone–working must have been a main activity in this workshop.\textsuperscript{724} This is also the house with troughs or vats along its inside walls, and the question is: how do these relate to the bones? The vats were built to a width of slightly under half a metre, sunk into the space’s floor along three of its interior walls and part of the fourth, and lined with waterproof cement. Their original construction date is around the middle of the fifth century. The floors were earthen except for the pebble–paved top level, which dates to the very end of the fifth century.\textsuperscript{725} Two small containers in the north–west and south–west corners interrupt the vats, and two wells provided water.

North of house F (map 15), in the open area between it and the marble workshop house H, a tank was found. Its walls yielded pigments and a crust consisting of a glassy, granular substance. It also contained more carefully sawn–off ends of animal bones and a continuous assemblage of pottery from the Geometric period to the first century BC.\textsuperscript{726} The tank was closed up in Roman times, and its fill seems similar to what was found underneath house F; that fill dates before the second quarter of the fifth century. Despite this, the date of the bones, glassy substance and pigments cannot be determined definitively. The purpose of

---

\textsuperscript{722} Ibid. 238–46.

\textsuperscript{723} Ibid. 222; evidence for the changing use of the house with the bronze workshop also presented in Börner 1996, 92–3. A Hellenistic smithy was probably located in house O, SE of house K: bronze slugs and terracotta moulds were found there (ibid. 269). Coroplasts (ibid. 249) possibly also worked in House G (Hellenistic: ibid. 235–6) and perhaps it was the final function of house K when the adjoining house L came to be used as a ‘terracotta factory’ (Young 1951, 236, 245, 249). Cf. Boersma 1970, 250–3. Zimmer 1999, 468–9.

\textsuperscript{724} Young 1951, 272.

\textsuperscript{725} Ibid. 231–2. Cf. Börner 1996, 95. It seems to have gone out of use in Hellenistic times.

\textsuperscript{726} Young 1951, 233–4.
the installation is uncertain: the vats were suitable for soaking, for example, in activities like dying textile or tanning leather, but the excavators found no stains or other evidence suggesting such use.727

Perhaps house F was simply used for laundry (though the vats seem impractically placed and rather small for this), but as will be discussed in the next section of this chapter, a more comprehensive interpretation offers itself within the wider context of the industrial district. For now, the conclusion is that at least six different buildings in the valley west of the Areopagos were used as workshops for marble (including the house of Mikion and Menon) at various moments during the second half of the fifth century and in the fourth. Some of these were active for a short time, others for longer, but several were always in use simultaneously. The obvious explanation for a relative proliferation of marble workers at this time and place lies in building activity on the Akropolis. In the second half of the fifth century, demand for marble workers surged here, directly below the main site.728 Once the last major projects, the Nike temple and the Erechtheion, were complete, workshops had several options. They could move to non-architectural private sculpture, should there be a market for it, or to marble furniture and other functional objects; they could leave Athens for building projects elsewhere; or they could abandon marble and move to other materials, such as for example terracotta or bronze.

Terracotta in particular seems to have gained popularity in the second half of the fourth century in the industrial district, though not before. At that time, several of the marble workshops in the area were transformed for different uses; some were left empty.729 By

---

727 Ibid. 233. It has been suggested that the combination with the bones which were found there (which admittedly may be from a later level) points to leather-working (Börner 1996, 95).

728 Young 1951, 271–2 lists previous scholarship. The continuously high demand for labour in Athens contrasts with Epidaurus, where local knowledge of stone-working was low (cf. above ch. II). There was no major quarrying or stone industry in the region. In short, the Epidaurian Asklepieion was unparalleled. Athens and some other poleis, e.g. Corinth, had experienced resident stone workers; yet these cities were exceptions, for few places could maintain such concentration of labour could (Burford 1969, 88, 203–6; 1972, 65–6). Remains of what is considered a temporary workshop for the building programme exist on the Akropolis itself: Building VI (the ergasterion) on the south side of the hill, dated to the 440s (Boersma 1970, 243; Stewart 2008, 404).

729 After the marble workshops had disappeared from the Areopagus area in Hellenistic times, the activities of the Street of the Marble Workers shifted to the Agora, in particular the South Stoa II and the area of the library of Pantainos. Wycherley and Thompson (1972, 187–8) have suggested that the location of most of the Roman workshops is determined by the presence of the ruins of
contrast, after the completion of the main construction work on the Akropolis there seems to have been no general abandonment of the workshops. If there was, other sculptors moved in very soon.\textsuperscript{730} In the fourth century, marble artefacts continued to be made in the area, and there are indications that it was mostly sculpture and not up-scale furniture that was being made: the marble debris in the area is interspersed by fragments of unfinished sculpture.\textsuperscript{731}

The continuity of the marble workshops in the Residential–Industrial District is evident, and so is their place in the city. The evolvement of a Street of Marble Workers both near the Akropolis and the road to the Piraeus Gate had practical advantages, in delivering supplies as well as in dispatching sculpture. It also could attract clients.\textsuperscript{732} The road was an old path before it became a proper street, and continued to be used until late Roman times. In the fifth century, it was a main link between the Agora and the Pnyx, the western part of the city and the Akropolis.\textsuperscript{733} Thus, it must have been a busy road, allowing a continuous stream of passers-by to look into the workshops and watch the carving. It is obvious why, after the pace of the great building programme had slackened, sculptors chose to stay.

The built workshops from the fifth century may be taken as an indication that in earlier times, Athens must have had marble workshops as well, even if much evidence for sixth-century workshops appears to have been lost over the centuries. The industrial district was occupied in the sixth century, but apparently not for marble working: an example of its use is the archaic cemetery in the south of the later Residential–Industrial District (map 8b).\textsuperscript{734} The Akropolis itself has yielded some marble chips and other sculptural debris, but

---

\textsuperscript{730} Except for the Poros building, which was only briefly used as a marble workshop in the fourth century. However, it was certainly not built as a marble workshop and probably reverted to a more suitable use.

\textsuperscript{731} Notably the fragments of a hand and herms from the fourth century BC, the marble chip dump in house K, the street in front of house G and the Poros building: AM S 1350, S 1426 and S 1427. Young 1951, 271 pl. 84b. Others, mainly basins, date to the Hellenistic and Roman period (Young 1951, 270 pl. 84a). Stewart 1990, 33, links the activity to the many gravestones produced while the ban on them was lifted, between 430 and 317 BC (\textit{op. cit.}; cf. below ch. IV.6) but this seems to be more relevant for the fourth century (cf. table A, chart A).

\textsuperscript{732} For similar considerations about the placement of a sculpture workshop in Aphrodisias (admittedly of a much later date), see Rockwell 2008, 92–3.

\textsuperscript{733} Young 1951, 145, 284; cf. Thompson and Wycherley 1972, 192–4.

\textsuperscript{734} Young 1951, 139; cf. Young 1951\textsuperscript{1} for the archaic roads and the archaic cemetery on the south edge of the area; also Thompson and Wycherley 1972, 192–7. The parts of the district which
this material is dated between Kimonian times and the beginning of the construction of the Parthenon, to the same period when several of the marble workshops in the industrial district were set up.\textsuperscript{735} The lack of earlier evidence is curious, because on the Akropolis, construction and marble carving were certainly going on in the sixth century.

The larger part of the production debris from the Akropolis must have been buried (as, for example, the chippings found in 19th-century excavations) or disappeared, by accidental fires or for the production of cement. Another option is that the work was done elsewhere entirely, but this seems very unlikely for large sculptures such as the Parthenon pediments or architectural elements. For individual votives, however, workshops further away are at least possible: one can hardly imagine that sculptors would have been allowed to work on the Akropolis for private patrons, especially considering how full of dedications, altars and buildings ancient sanctuaries were.\textsuperscript{736} The final finish of the statue may have been a different matter, but is hard to imagine actual carving being done inside the temenos, especially if major construction work was going on at the same time.

In sum, the evidence from workshops in the sixth and fifth centuries varies. Sculptors worked on and around the Akropolis in both centuries. Debris on the Akropolis and nearby in the industrial district confirms such activity in the fifth century (and for the latter site, in the fourth). Contexts from the sixth century, however, are lacking. Were it not for large numbers of archaic sculpture, it would seem as if there were no sculptors in Athens in the sixth century. And perhaps, in a way, this is true. The evidence of the fifth and fourth centuries comes from settings where sculpting was practised for considerable periods of time.\textsuperscript{737} If sixth-century sculptors were more itinerant than later ones, as was suggested in the previous chapter, they would have stayed in Athens only briefly while working on a commission and then moved elsewhere to take the next. The manufacture debris of a single statue in one location cannot compare to continuous and large-scale building on the Akropolis, nor to large numbers of gravestones and votives produced over generations in the fifth and fourth centuries by resident sculptors.

\textsuperscript{735} Lindenlauf 1997, for example, 67–9; see also above n. 107. Similarly, much building debris has been excavated on the sites of some public buildings in the Agora built in this period, e.g. poros debris in the Stoa Poikile (Shear 1982, 13–4 n. 16; cf. 30–2).

\textsuperscript{736} An exception may be possible in the final finish of the statues: see below p. 184.

\textsuperscript{737} See also Zimmer 2006, 36.
One or more sixth-century workshops may well be found in Athens at some point: the work had to be done somewhere, probably within or close to the city. But compared to the fifth and fourth centuries, the lack of preserved contexts from the archaic period is noteworthy. Perhaps it reflects a shift in practice from the sixth century to the fifth. The quarries at Mt. Pentelikon yielded unfinished sculpture, among them a seated goddess, a lion and a colossal kouros, all carved to a relatively advanced stage – enough to establish their archaic date. This coincides with the earlier suggestion that sixth-century sculptors went to the quarries more often than classical ones, to do the pre-cutting themselves. Debris of sculpture production is hard to find in such unfixed settings and even harder to date. That said, the unfinished pieces in the quarries suggest that in the archaic period, these are the only places where unfinished pieces and debris accumulated, so that the traces of production show up in the archaeological record.

Thus, sixth-century sites of marble working, as they may be called, are unlikely to stand out much in Athenian (city) excavations. Nonetheless, it is difficult to imagine that sculptors who left numerous signatures, such as Gorgias, Endoios, or Kritios and Nesiotes, stayed in the city so briefly that a place to work, perhaps combined with a residence, was unnecessary. For the non-Athenians among these sculptors, there was no question of buying land in Attika even if they had wanted to, but renting a house or workshop must have posed few problems. Perhaps an area close to the Akropolis or other sanctuaries (or any other convenient location, for example, the outskirts of the city near transportation routes) was allotted for carving sculpture, or naturally developed into a sculpture area over time.

---

738 Rimky 1993, 293 argues that sculptors in the archaic period in all likelihood had ‘more or less permanent establishments’.
739 Korres 1994, 88–9. See also Wiseman 1968; Carpenter 1968. In the Spilies quarry on Paros, unfinished sculptures were also found, some probably from the fourth century (Schilardi 2001, 53); but others found in workshops close to this quarry show a wider chronological and typological range (korai, basins and column drums from archaic times).
740 Chatzedemetriou (2005, 88) suggests they could have imposed on existing workshops. Though this is certainly possible, it should be noted that if the borrowed space was a marble workshop, it would still have left the evidence, and if it was some other kind of workshop the dusty working of carving would in many cases have disrupted the original activity.
741 For these signatures see the previous section, ch. III.3.
742 For location of ‘noxious’ workshops just outside of the city, cf. e.g. Parlama and Stampolidis 2000, 34; Zimmer 2006, 35. The story of Lygdamis also implied that countryside estates of patrons could offer space to work.
Alternatively, patrons could have offered sculptors a place to stay on their land, if the estate was suitably located.

Contrary to marble working, bronze casting is amply attested in archaic Athens. This is especially relevant since some sculptors worked in both materials and there is no personal reason why they would prefer a built workshop for one but not for the other. Of course, the similarity does not apply to the casting installation, which would be located as far as possible from residential areas. Marble workshops cause annoying noise and dust, but this can be kept to a large extent indoors, as for example, the use of rooms in the house of Mikion and Menon and house D suggests. The process of bronze casting, however, results in soot, smoke and stench. As is the case with potter’s kilns, foundries are somewhat more likely to be located on the outskirts of cities, for example, near the cemeteries where bad smells were rife anyway.743

The so-called Archaic Foundry in the Agora apparently defies these practical views. It was built around the middle of the sixth century on the east side of the Kolonos Agoraios (map 7a), and was placed between what would in classical times become the Old Bouleuterion and the temple of Apollo Patroos (map 7b).744 At the time of its use, however, there seems to have been no residential context, nor even remains of a fixed structure that served as a workshop or shop. The same circumstances apply to other foundries from archaic Athens.745 The Archaic Foundry is a simple installation for casting a statue or parts of statues, the moulds for which were buried in a pit. Its remains reflect the many technical problems which ancient bronze casters faced.746 Obviously, casting pits and pieces of terracotta moulds are more likely to stand out in excavations than occasional heaps of marble debris from a statue carved in the open air or in a make-shift workshop which was demolished afterwards.

745 As listed in Zimmer 1990. A workshop on Thasos is from an urban context and seems located in a house; but it dates to the second half of the fifth century: Zimmer 1990, 32 n. 199 (with ref.); id. 2006, passim.
746 Mattusch 1982, 11; also 12 fig 26; 1988, 56; Zimmer 1990, 33.
Many foundries in Athens date from the fifth and fourth centuries,\textsuperscript{747} which may be attributed to the rising market for bronze statuary at the time. However, in concurrence with the trends in bronze and marble sculpture outlined in the first chapter of this study, this fifth-century increase in the number of bronze workshops runs parallel to a rise in workshops for marble sculpture. Thus, the excavation record suggests that in the fifth century, fixed workshops became more numerous across the board, rather than being an indication that bronze casting became more popular than carving marble.

In the classical period, a main difference between marble and bronze workshops is that the former sometimes seem to have served as houses as well as work places, while even built foundries rarely had a residential function.\textsuperscript{748} Undoubtedly, this is a result of unpleasant heat, noises and smells caused by foundries. If others preferred not to live in its vicinity, why would bronze workers want to? Sculptors who worked in both materials could have had a workshop for marble in which they finished the bronzes, and a casting pit somewhere further away. A possible example of the tendency to locate foundries far from housing or, in this case, in an area where bad smells linger anyhow, is Building Z in the Kerameikos (map 6b).\textsuperscript{749}

Transportation was another factor which influenced the positions of both casting installations and marble workshops in the city. The foundries near the Hephaisteion or south of the Akropolis are conveniently located for delivering statues to their destinations.\textsuperscript{750} If statues received their final finish in the places where they were to be set up, the vicinity of

\textsuperscript{747} Zimmer 1990, 34–83 lists 11 casting installations, almost all without any buildings nearby, from the fifth and fourth centuries: Building Z, Kerameikos (Knigge 2005, 5 pls. 2–4); ‘Mudbrick foundry’ south–west of the Archaic Foundry (Thompson and Wycherley 1972, 190; Zimmer 78–80) and one north of the Kolonos Agoraios (Thompson and Wycherley 1972, 189; Mattusch 1988, 356). Three installations are south of the Akropolis: the ‘workshop of Pheidias’ (Zimmer 1990, 62–71, esp. ns. 296–7); one east of this and one near the Asklepieion. A foundry was near the Olympieion; three small ones on or near the Agora, one in its south–west corner, near the Street of the Marble Workers: the ‘Keyhole foundry’ (Zimmer 1990 80–82).

\textsuperscript{748} The traces of a large building, probably open on one side, near ‘Pheidias’ foundry’ south of the Akropolis may have served to assemble and/or finish the statue, perhaps the Athena Promachos, made in the casting pit next to it; it was open towards the pit, so it is unlikely anyone would have lived there (Zimmer 1990, 67–71).

\textsuperscript{749} Zimmer 2006, 35. A fourth–century bronze workshop in the Commercial Building was excavated just outside the Agora, northwest of the Stoa Poikile (Shear 1984, 43–50; Camp 2003, 247–53): finds include slags, bronze filings, various pigments.

\textsuperscript{750} Listing of the foundries above n. 747. The exception of the archaic foundry near the Hephaisteion dates from a time when the west side of the Agora was hardly built over yet. For considerations of
workshops for paint, glass and gilding would also be handy. Furthermore, the location of workshops may have been related to their main function: those near the Akropolis would have focused increasingly on the manufacture of votives, while those near the city walls may have specialised in sepulchral monuments.

The evidence discussed in the previous section has shown that of the sculptors in Athens in the sixth and fifth centuries, only Endoios and Philergos signed both votives and gravestones. Since they worked together at least once, this seems to be the only sculpture workshop which was demonstrably active in both areas. Is the conclusion therefore that workshops were usually specialised in votives or in gravestones? The archaeological evidence does not confirm this, because too few unfinished pieces were found in the excavated workshops, and signatures are inconclusive. Only the discovery of more sculptors’ workshops in Athens could prove a correlation between the location of workshops and a preference for votives or gravestones. However, the necessity for sculptors to travel for commissions in the archaic period, corroborated by the lack of evidence for long-term sculpture manufacture in one place, makes it unlikely that sculptors would limit themselves to one function or genre. The years of the Akropolis programme are, of course, a different matter. Afterwards, the preserved workshops testify to greater stability in the trade, and to residential sculptors in Athens. In the later classical period, and perhaps effectuated by potential site-related specialisation, the trade may slowly have turned to stock instead of working on the basis of individual commissions.

Marble workshops in Athens appear in a pattern similar to that of bronze foundries: very scarce or no examples from the archaic period, but rising numbers in the fifth century. The locations of both are determined by practicalities of production and transport, such as the supply of materials, the presence of water, possibilities of transport for the finished products.
products, and easy access for potential customers. Moreover, towards the end of the fifth century, the preserved debris in the various excavated marble workshops starts to increase (thus becoming more recognisable in the archaeological record than in the archaic period) thanks to longer periods of single-purpose use: carving marble. While before the final quarter of the sixth century, the lack of evidence for workshops may underline the transient nature of the trade, by the end of the fifth century sculptors had set up shop and household in good locations both from a professional and residential point of view.

5 THE WORKINGS OF TECHNE

Sculptors were not alone in the art world of Athenian sculpture. Other craftsmen and traders were active in the transport and delivery of stone, but also in later stages of the manufacture of sculpture, some of these supporting trades were the domain of craftsmen who were trained in entirely different crafts than marble working. These people are the support personnel of the art world of Athenian sculpture. Since they would hardly sign the monuments that they had painted or produced the dowels for, it is difficult to trace them in the epigraphic record; but archaeological evidence may offer glimpses of their work.

The Residential–Industrial District west of the Areopagos (map 15) illustrates this cooperation within the ancient sculpture world. In the previous section, evidence of both marble working proper and crafts other than sculpture have been presented. The combination of specialisations at which these remains point fits the model of art worlds particularly well. Two workshops in the area illustrate the possible activities of the support personnel. First is house D (maps 17a-b), which was likely to have been a smithy around the turn of the fifth to the fourth century. The chippings characteristic of marble working were found in its courtyard. The location of the workshop and the remains found in it suggest

---

755 Young 1951 (217–23) describes slugs found in the courtyard, in iron and bronze. The hearth showed traces of long periods of exposure to very high temperatures. Nevett 1995 discusses residential aspects of house D.

756 Young 1951, 222: the quantity is such that Young proposes carving activities. The hearth was used for metal-working in the third period of the house, long after the nearby drain was built in the early fourth century; but the slugs came from a layer dating to the house’s second period, i.e. the early fourth century BC.
towards what may be called a support–workshop: this means that the smith specialised in, for example, clamps and other metal fittings necessary for fastening sculpture onto pedestals and dowelling blocks in construction. A reason why this activity was only taken up in the fourth century BC could be that the workshops in the area had started working for themselves after the completion of the Akropolis building projects, depriving them of the on-site (or perhaps more likely, nearly on-site) smithies which had provided the many dowels and other parts for those buildings serially.\textsuperscript{757}

A second possible support–workshop is house F, which was surrounded by marble workshops (houses G and H, and the Poros building; only house E to the south shows no signs of marble–working).\textsuperscript{758} The fill under the floor and in the tank outside the north wall of house F contained pigments and bone remains, and the tank furthermore contained a glass–like substance. The straight parts of the bones were most likely used for making styli and other tools, like the one found in the house of Mikion and Menon (pl. 23c); they can also have been used to make glue or paint.

For the latter, two types of pigments were used in antiquity: minerals and organic material.\textsuperscript{759} Both need an elaborate process of preparation before paint usable on marble can be produced. First, the minerals must be pulverised to a specific degree: if the powder is too fine, many pigments will refract the light in such a way that the colour will look sallow.\textsuperscript{760} In order to achieve the intense brightness which can, in exceptional cases, still be observed on ancient sculpture to this day, the pigment powder needs to be floated. This serves to remove waste, and more importantly, to divide the purified pigment by grain size.\textsuperscript{761} The pigment is put in casein solution in relatively small quantities at a time. After a while, little pieces of dirt,
and then the finer grains of the pigment will float to the surface. This is then drained, and the process is repeated until heaps of pigment of different grain sizes remain.

House F and its installations have never been explained satisfactorily; yet the material presented in the previous section may suggest that it was in fact the shop of a pigment salesman, a pharmakotribes. Although no traces of colour were evidently found by the excavators, floating pigments would be nowhere near as effective in leaving behind colour stains as deliberate application of paint or dye would, for example in dying cloth. Moreover, in cases where applied colours have survived to this day and are visible to the naked eye, they have not been exposed to open air for long periods of time, as happened with the troughs of house F. The size of the vats, the small containers in the north–west and south–west corners of the room, the water supply and the outlet near the north wall all make this a well–equipped place for floating. The presence of lumps of pigment in the well north of the house and under the house suggests this craft too, though the latter layers are older. That no grinder or mixing bowls for paint were found makes sense, since they would have been part of the movable inventory of the workshop: when the pharmakotribes left, he took such implements with him.

Colourful paint on their sculpture was of utmost importance to the ancient Greeks. Extensive research in this field over the last decades has proven that ancient sculptures were covered in paint, especially in the archaic and early–classical periods. Only in few places was the marble visible, and the painted rendering of, for example, embroidered dresses or drapery was luxurious (pls. 24a–d). None of the Agora workshops in which pigments were

762 D. 48: 12.5, 13.3, 14.2. In Demosthenes’ description, slaves do the grinding. The emphasis would originally have been on organic pigments, other types of ingredients for paint would very likely have been sold in the same shop. Cf. LSJ s.v. ψευδαχωρίζω. It is interesting that there is a word which is used by Plutarch (Mor. 436b.7) for ‘the grinding of botanical pigments’: σύντριβειν. Other words for dye–sellers, referring to specific colours, are e.g. chromatopoles, krokopoles (saffran, red or yellow) and porphyropoles (purple or burgundy). I am grateful to dr. Angelos Chaniotis and dr. Mark Janse for bringing these terms to my attention. For terminology of colours in general, Crescenzo 2006; Maugan–Chemin 2006.

763 No mention is made of an investigation of the vats with UV light, which has over recent decades become a more common practice in ancient colour research.

764 See above p. 172.

765 Even faces of bronze statues would be inlaid with other metals for a colourful effect (e.g. Descamps–Lequime 2006; Muller–Dufeu 2006).

found dates from the archaic period. Of course, this corresponds with the pattern of the marble workshops, which also lacked fixed abodes until the fifth century. The complexity of the preparation of paint it is impossible that painters prepared their own materials. They could have got certain pigments, like ochre and some reds, from Attika proper; other parts of Greece are rich in suitable minerals as well. However, quite a few pigments had to be imported from other parts of the Mediterranean or even further away, so that painters had to be ardent travellers if they were to provide their own colours.

Several ancient methods of producing paint for wall-painting – the closest parallel for the colouring of sculpture – are known, using various bases: egg or casein for tempera, or hot wax and some olive oil for ganosis, i.e. encaustic painting. Both techniques have been attested as early as the fifth century. A less well-known painting technique used paints based on bone powder, calcium phosphate, and was long thought not to have been used before the Middle Ages. However, wall-paintings in a tomb in Vergina in Macedonia show that it was known as early as the fourth century.

A hydria from the Vatican Museum shows a painter who is decorating a gravestone with an astragal or kymation in such a technique (pl. 25a), not unlike one depicted on a lekythos in the National Museum in Athens (pl. 25c). A fourth-century vase painting (pl.

Caley 1945; cf. Shear 1982, 45 for traces of pigments from a fourth-century workshop context near the Stoa Poikile.

Brécoulaki and Perdikatsis 2000, 193; Caley 1945, 155; on p. 153–4 he lists five cases of bulk pigments found in sixth or fifth-century context, most of which were in small vessels which looked like they had been used for mixing. Two were found in the western half of the area of the later Middle Stoa, while one came from section B’, near the house of Mikel and Menon. Further specification was impossible, because only one of the containers was published (in Caley’s article: AMP 9516).

The provenance and composition of pigments is discussed by e.g. Caley 1945, 155; Wallert 1995; Brécoulaki and Perdikatsis 2000; Brinkmann et al. 2004, 239–41.

For the effect of this on coloured sculpture in wall-paintings see Moormann 1988, 71.

Richter SSG, 153–6; Brinkmann et al. 2004, 241; Palagia 2006, 260–1. Ganosis is attested on some of the Parthenon figures and in Temple E at Selinunte; but contrary to Palagia’s contention that the skin of figures was left unpainted, the veiled Hera from the metope of the latter temple was given a lucid complexion by means of a wax-polish to which some light pigments were added (Brinkmann et al. 2004, 242 fig. 1). That stucco was sometimes provided as a base for paint on coarser stone types can be seen in the stele KM P 1132, cat. G 75; a similar layer may have covered the poros stele KM P 1133, cat. G 96.


Museo Gregoriano Etrusco, inv. 14964: Beazley ARF, 47.2; Chatzedemtriou 2005, 87–9, 90.
25b), and possibly a sixth-century relief from the Akropolis, show assistants heating wax in a brazier, while the master painters work on the statues.\textsuperscript{774} The statue in the vase painting is finished: it stands on the spot in the sanctuary where it is to remain, on a pedestal with a separate support for the club.\textsuperscript{775} If this picture reflects a common situation, statues were set up before completion, that is, before they were painted.

It is quite likely that for major building projects such as the late-archaic temple of Athena (for example, the three-headed monster on the ‘Blue-beard Pediment’) or the Periklean building programme, for which obviously large amounts of pigments and paints were needed, specialised workshops were set up near the Akropolis. The few pigment finds from datable contexts around the Akropolis date either to the time before the Persian wars or to the later part of the fifth century.\textsuperscript{776} This may be coincidental: after all, private sculpture, as well as terracottas and wall-paintings, needed paint too, and there must have been ample work for the craftsmen who painted sculpted figures or figurines in all periods, with or without large-scale construction.

The rich and delicate decoration on Greek sculpture from the archaic period is, moreover, beyond amateurism.\textsuperscript{777} Phrasicleia’s ambitious drapery and the paintwork on other archaic statues from Athens show that those who incised or painted the patterns on these sculptures had keenly observed the behaviour of decorative bands such as meanders in draped cloth (pls. 24b–c).\textsuperscript{778} The ornamental richness of the archaic period disappeared in the fifth century for a more tranquil colouring. Archaic painting on sculpture had provided a one-on-one rendering of the sculpted objects; but in the fifth century, this changed to a

\textsuperscript{774} Akr. 3075, cat. V 216 dates to the middle of the sixth century, which is early for encaustic painting. It is therefore uncertain whether this interpretation is correct (Chatzedemetriou 2005, 178). Cf. AMA 312–3 no. 431, fig. 357. NYMM S0.11.4 in Robertson, 1975, 485 pl. 152a; Chatzedemetriou 2005, 90; Palagia 2006, 255. According to Chatzedemetriou, the scene should be interpreted as taking place indoors, because of the presence of a phiale hung from the wall and the column to the left of the scene.

\textsuperscript{775} Chatzedemetriou 2005, 87. She also points out that Herakles himself is standing behind the painter as a sign that this scene is set in the sanctuary.

\textsuperscript{776} See above p. 172 and n. 768 respectively.

\textsuperscript{777} E.g. Brinkmann 2005, 93–119 (on the rich colours of the Aphaia temple on Aegina); also Richter SSG, 156.

\textsuperscript{778} Hemelrijk 2004, 203 rightly points out that some of the folds are realistically impossible, although artistically wonderful. Examples on the Akropolis and from funerary contexts show high technical standards of finish in stone and paint of folds, though not always realism: e.g. Akr. 674, cat. V 12 or KM P 1051, cat. G 22 (pl. 15b).
more pictorial approach. For example, on the himatia of the figures in fifth-century reliefs, the channels between the folds were painted a darker shade of the colour used for the rest of the drapery (pl. 25d).\textsuperscript{779} This manner of painting sculpture in the fifth century, enhancing the modelling of the surface, evidently resembled the style of the later wall-painter Nikias, who also painted the works of Praxiteles in the fourth century.\textsuperscript{780}

If it were not for the intricacy of the painting on some archaic statues, the suggestion that archaic sculptors painted their work themselves would be tempting. In fact, as was suggested above, the base for Nelon son of Nelonides may be a case of the sculptor Endoios taking up the brush.\textsuperscript{781} Yet the painting on archaic sculpture is a rendition of the sculpted object, and usually accurately follows the behaviour that the real surface would. Whether many sculptors had the knack for such complex paintwork is doubtful.\textsuperscript{782} On the other hand, the incisions which guided the painter on intricate archaic sculptures like, for example, the dresses of Phrasikleia or the Beautiful kore (pl. 2c), suggest the sculptor’s rather than the painter’s hand: not only is it more likely that the incision of guidelines in the marble was done by the sculptor, but the understanding of the sculpted form which it reflects may suit him more than the painter. Painting in general, in the sixth century and especially in the late-archaic period, must have been performed to very high standards, if vase paintings are any indication; and so the spatial insight of painters may well have matched that of sculptors.

Sculpture from the fifth and fourth centuries shows no more complicated paintwork than before. With regard to patterning, classical painting is of a different nature, requiring insight in shades and light-and-dark effects rather than the behaviour of patterned cloth. Despite this, it is likely that in the classical period, specialist sculpture painters existed.

\textsuperscript{779} Koch-Brinkmann and Posamentir 2005, 151–59. Dr. Christina Vlassopoulou of the Akropolis Museum, who was one of the developers of a non-invasive cleaning method using salt water and exposure to lasers and bringing to light several small spots of colour from under the soot on the Parthenon frieze, tells me that there, too, the painting was pictorial rather than object-focused. I am greatly indebted to her and her wonderful staff for allowing me to see the cleaning process in action in the fall of 2005.

\textsuperscript{780} Plin. \textit{HN} 35.133; also \textit{APF}, 286 no. 8334; see also Lauter 1980, 530; Palagia 2006, 261, 275 n. 84. Cf. p. 192.

\textsuperscript{781} Endoios. Cf. Keesling 1999, 511, 527. The fourth-century painter Euphranor also sculpted and wrote treatises on colour and \textit{symmetria} (Plin. \textit{HN} 35.128; Stewart 1990, 64; Pollitt 1995, 20). There is no reason why such versatility would have occurred in the fourth century, but not in the sixth. Above p. 154.

\textsuperscript{782} Having done such painting herself, dr. Ulrike Koch-Brinkmann (pers. comm.) concludes that it in her opinion, must have been a specialised job.
although they may have seen it as a job on the side of wall-painting. Since so little of the latter is preserved, the only helpful material for comparison are vases. An interesting connection with pottery lies in the potential personal relations between craftsmen of various kinds, which would make co-operation more likely.\textsuperscript{783}

Evidence of the painted statuary of Athens appears to confirm the interpretation of the workshops in the Residential–Industrial District outlined earlier. Some of the materials needed for painting the sculpture produced in the area might be among the contents of house F: the bones, pigments and the glassy granular substance found in the tank north of this workshop, which contained quartz, sand and high levels of calcium, magnesium and phosphorus.\textsuperscript{784} Chemical analysis of this material has established that the composition excludes the use of a smelter, and that bones, ground to a powder, are the most likely source for the substances found in this house.\textsuperscript{785}

Material of a similar texture was found in the eastern part of the South square of the Agora in a Roman context, where sand and water were used to saw marble slabs.\textsuperscript{786} Marble powder was a by-product of the sawing; mixed with the water which was used to cool the sawing process, it became a hard, conglomerate mass. If house F produced bone tools, quartz powder may have been used to smooth them with, resulting in a mix of bone and quartz. However, since a chemical reaction seems to have taken place between the bone powder and the quartz, it is more likely that the mixing was done on purpose. If so, the glassy substance is production waste, and the workshop’s main product may in that case have been glass inlays.\textsuperscript{787} The third possibility, that of the manufacture of paint and glue, is suggested by the combination of bone and pigments.\textsuperscript{788} These options need not be mutually exclusive. House F may well have been a workshop for several trades.

\textsuperscript{783} For example Antenor (above p. 158) was possibly the son of the painter Eumares, while Euthymides signed sometimes as the son of Pollias (cf. above p. 153). See also Webster 1972, 299–300; contra Stissi 2002, 152. More on this topic below, p. 190.

\textsuperscript{784} Young 1951, 233–4 n. 114.

\textsuperscript{785} Paint based on ground bones with high calcium and phosphorus levels was attested in one instance from an ancient context (see above n. 772); no literary evidence remains.

\textsuperscript{786} Thompson and Wycherley 1972, 188.

\textsuperscript{787} This is less probable here, since the use of a smelter is unlikely. Cf. Richter SSG, 147; Ridgway 1969, 106; Lapatin 2001, 178–88. Palagia 2006, 123, 152 n. 38 (lit.) describes tools and materials from the workshop of Pheidias in Olympia, used for making precious stone and glass inlays for the throne of the master’s Zeus.

\textsuperscript{788} See above n. 785.
A possible combination of bone-working and the production of paint and glass in house F offers an interesting take on the bone stylus whose inscription provided a name for the house of Mikion and Menon (pl. 23c). It is perhaps less likely that the sculptor Mikion, who after all had a house and workshop on a prime location, would have made his own styli. It is even more far-fetched that he would then have put a *fecit* inscription on it. Only if he were a bone cutter (not a chryselephantine sculptor, but a stylus maker) as well as a sculptor in marble would that be plausible. However, the excavators of neither the house of Mikion and Menon, nor of the adjacent wells report any signs of bone working. Furthermore, Mikion’s name is absent from literary and epigraphic records of his supposed lifetime in the first half of the fifth century. Thus, it is possible that the sculptor of the house which was to become Menon’s house, was not Mikion at all. Mikion made styli and other bone tools for a living, and put his name on his products so that his clients would not forget him. Whether he worked nearby in house F in the industrial district must be left to imagination.

If the first sculptor working in Menon’s house bought his styli from Mikion’s place, he may have got other supplies from specialists, too. This suggestion of a division of labour in sculpture–supporting crafts is all the more likely at a time when sculptors travelled less. They had little or no chance of obtaining all the materials for the work themselves: some pigments, sanding powder or other basic necessities came from faraway sources. Interestingly, the Parthenon building accounts list polishing as the second most expensive part of the production of architectural sculpture and other marble elements of the building: only transport is more expensive, while both quarrying (including the cost of the marble) and carving the figures are quite a lot cheaper. Admittedly, the surfaces in need of polishing

790  The argument is admittedly *ex silentio*. A Mikon, sculptor from Athens, signed a victor’s base in Olympia (*IG* I 1475, dated 472 BC.) for Kallias son of Didymios, also of Athens. The difference in the name is significant. Two Mikions, probably both metics, feature in the Erechtheion accounts in the late fifth century, considerably after the Mikion of the stylus (*IG* III 475, ln. 71, 246–65; cf. Broner 1933, 379; Randall 1953, 200, 206). One or both could be grandsons of the Mikion in Olympia, but again, the difference in name is problematic. One lived in Melite, the other in Kollytos, both close to the Areopagus valley (Young 1951, 140–2). They did carpentry and odd jobs for daily wages and neither of them were apparently sculptors.
791  An interesting array of provenances of pigments used on a polychrome lekanis is described by Wallert 1995.
792  Stanier 1951, 69, 73.
for such a building are large; but it is likely that the long hours of labour which went into this added considerably to the price.\footnote{793}

Thus far, the activities in the Residential–Industrial district show a variety of craft specialisations, which may nonetheless all be supportive to the sculpture art world. Increasing horizontal specialisation in supporting crafts must have occurred within sculpture workshops too.\footnote{794} Analogies with other crafts suggest that among those who worked at a workshop, the tasks would be divided according to criteria such as seniority, capability and the craftsmen’s own preferences.\footnote{795} An example of specialisation within a workshop could be in carving certain genres: in the building accounts of the Erechtheion, different sculptors perform such jobs as fluting or carving the ceiling coffers, or the figurative sculpture.\footnote{796} In particular phases of the work, such as preparation or finish, the sculptors of a workshop who had not done the carving of a piece might join in, or several sculptors might work on various phases of one architectural element.\footnote{797} Sculptors and masons rarely overlap in the records and architectural and figurative workshops seem to have been separate entities. Considering the how many columns, walls, bases, lintels and so forth Athens needed at the time, such focus is unsurprising.

Organisation-wise, ancient sculpture workshops are generally thought of as simple affairs, with a master sculptor and perhaps one or two assistants, apprentices or slaves; in the former case, they could have been sons of the sculptor.\footnote{798} The sculpting families of Archermos, Myron, and later Praxiteles, are examples of the latter situation.\footnote{799}

\footnote{793}{Polishing is extremely time-consuming. The contractors, masons and sculptors would have sold themselves short if they had not incorporated this into their estimates.}

\footnote{794}{Evidence for labour organisation in ancient workshops is scarce and circumstantial: e.g. the Foundry Cup (Berl. Staatl. Mus. F 2294: bronze casting): Himmelmann 1994, 7–8; Mattusch 1996, 18. Cf. n. 795.}

\footnote{795}{E.g. between potters and painters, but even among the painters themselves, there would be specialisation: Webster 1944, 23; Scheibler 1983, 110, 116–7; Stissi 2002, 86–92, 124–44.}

\footnote{796}{Randall 1953, 206–7. Cf. also the Asklepieion temple accounts from Epidaurus, e.g. IG IV2 102.}

\footnote{797}{Randall ibid.; e.g. IG I3 475 (Erechtheion). Cf. Jockey 2000 (Hellenistic); Rockwell 2008 (Roman).}

\footnote{798}{This in contrast with bronze workshops whose production in some cases indicates impressive size and complexity: e.g. Pytagoras of Rhegion whose workshop produced four statues for victors of the 484 Olympic Games (although not all commissioned at the same time): see Smith 2007, 102.}

\footnote{799}{Mark 1995, 25; Stewart 1990, 243–4 (Archermos and his family), 254–7, 283 (Myron and Lykios), 277–81 (the family of Praxiteles). Also Künstlerlexikon II, 304–19; Muller–Dufeu 2002, 123–7 nos. 337–47 (Archermos and family), 250–1, 386–9 (Myron and Lykios); for the latter also Corsa 2004, 12–39, and passim for Praxiteles and his family (Muller–Dufeu 2002, 480–529, 539–43, for his sons: 826–7, 920–1); also above, p. 158 and 163.}
accounts confirm that families worked on projects together, e.g. on the fluting of columns in the Erechtheion records. And surely, a man and his son could have run a sculpture workshop, especially if younger children or slaves were available for simpler but time-consuming work such as polishing, so that the master and his advanced apprentices could concentrate on carving. However, the images of sculpture workshops seldom show more than one figure working on a statue simultaneously. Then again, sculpture workshops are rarely depicted, and in the few existing cases the statue fills much of the picture.

Nonetheless, sculptors-to-be needed to be trained, in Athens as elsewhere, by experienced sculptors, and there must have been a rudimentary programme which they were submitted to. Some unfinished pieces from excavations may well have been for training. Sculpted body parts can of course be dedications, but they can also be attempts by sculpture apprentices. It has been argued that early archaic carving methods were so straightforward that they were easily learned: the outlines of the statue were drawn on the sides of the block, after it was just a matter of achieving the proper depth – looking at early statues from

---

800 IG I² 476, lines 305–14 list Laossos of Alopeke and his sons Karios and Parmenides, and Phalakros of Paiania with his sons Thargelios, Philorgos and Gerys. In both these cases, another person, seemingly no relation although one of them was from the same deme as the master sculptor, is mentioned as a co-worker: in the former Philon of Erchia in the second Philostratos of Paiania. Furthermore, one Ikaros, presumably a slave, was apparently part of the workshop of Laossos. Further examples in lines 315–26. Cf. below n. 815.


802 Chatzedemetriou 2005, 32–5 pls. G1–8, 85–90. She argues that many examples of images of marble workshops, e.g. the figure to the right-hand side of Athena on the Foundry cup (Berlin St. Mus. F 2294, ARV 400 no. 1), as well as the herm being carved in its tondo are more likely cases of wood carving, based on the tools which are used. She contends that the way in which the sculptor holds the herm indicates it is of wood rather than of heavy stone. While this true, the demands of the composition could have led the painter to impinge on reality. The manufacture of stone sculptures is only certainly depicted on Greek vases in two cases, both while being painted. See above ns. 773–774.


804 From the Agora are an unfinished head of a man, AM S 1185, cat. G 15, pl. 23e, from an undisturbed early fill; cat. G 101, KM P 1471 is part of an arm; cat. G 102, KM 1512 part of a foot on a plinth, both from the Kerameikos. The two-sided pieces of parts of feet (carved to per piece of stone) and some other fragments from Aphrodiasia (Van Voorhis 1998) are good examples, but they date from late–Roman times. They show that students were given a model and then assigned to try and copy it manually, creating two feet from a limited mass of stone. In most cases, polishing and finish had not been done (ibid. 181–2).

805 Hurwit 1985, 197.
the side will demonstrate the point.\textsuperscript{806} This is, of course, a simplification: it took much
ing experience and knowledge to get it right even with strict guidelines for proportions. The
initial effort of learning the craft must have been considerable; the subsequent development
and its speed are remarkable.\textsuperscript{807}

In all likelihood, family ties were important in continuing workshops, but this view
should not be idealised. In cases like the one of Myron and his son Lykios, the craft was
passed on from one generation to the other. However, Antenor’s father Eumares was a
painter, so not all sons followed in their fathers’ footsteps.\textsuperscript{808} If a master sculptor had no
sons willing to succeed him, or if he had no sons at all, he could take on other men willing to
learn the craft (or even adopt them), or if he could afford it, he could buy a slave.\textsuperscript{809} However,
large numbers of co–workers, whether free or slaves, were unpractical in the small rooms and
courtyards of most Athenian workshops.\textsuperscript{810} Life–size and more than life–size sculpture from
the fifth century, for example the Agora goddess,\textsuperscript{811} would only leave enough space for
perhaps one other project, even in the courtyards of the largest workshops. If preparatory
work was being done in the same space simultaneously, she would have left no room at
all.\textsuperscript{812} Undoubtedly, this also applied to large pieces from the archaic period, when

\textsuperscript{806} Ibid.; see also among other authors Ridgway 1969, 98; Guralnick 1982; Martini 1990, 123–4;
Stewart 1990, 34; Boardman GSAP, 20–1; Rockwell 2008, 95–110 (for Roman Aphrodisias).

\textsuperscript{807} The knack of imagining correctly what the carving on one side will do with the two adjoining sides
is hard to acquire (pers. comm. of the sculptor Mark Luscombe, Wemeldinge, The Netherlands).

\textsuperscript{808} Cat. B 197. See also Viviers 1995, 213–4; Keepling 1999, 527 also lists Euthymides’ signature as
son of Polias or Pollias, who may be the archaic sculptor (above p. 153).

\textsuperscript{809} The nature of apprenticeship is difficult to establish in the sixth and fifth centuries: Burford 1972,
89 mentions a rare apprentice contract, but it is from a much later period.

\textsuperscript{810} The courtyards in which much of the carving went on in a marble workshop at Aphrodisias in Asia
Minor were quite spacious (Voorhis 1998; cf. also Rockwell 1991). In Athens, house G had a
courtyard of c. 6.2 m. in length and slightly less width; the courtyard of house D was c. 20.6 m\textsuperscript{2}.
The odd–shaped courtyard of the house of (Mikion and) Menon was approximately 16.2 m\textsuperscript{2}. Of
similar dimensions are the workshops in the Commercial Building outside the north–west corner
of the Stoa Poikile (above n. 749) and shops on the east side of the Agora (Shear 1975, 346).

\textsuperscript{811} AM S 1882, cat. V 255.

\textsuperscript{812} Especially 'with chips flying about': Rockwell 2008, especially 94–5 (in a Roman context,
regarding room for clay models), and 109–10. A similar point is explored for a Hellenistic
workshop on Delos by Jockey (2000, 82 and \textit{passim}): the large numbers of statuettes of
Aphrodite, all more or less halfway to completion (Jockey’s stage 2 out of 3: carved until just
before final details and polishing) shows that in that workshop, a kind of production line was set
up for which each employee executed the stage of manufacture at which he was best. In this way,
the Delian workshop could make the most of its staff, which probably had only partly finished
their training, while at the same time giving serious competition to coroplasts’ workshops. Earlier
monumental free-standing sculpture was more numerous then in the fifth century BC: one only has to think of the early kouroi or the Antenor kore.\(^{813}\)

For a workshop whose master sculptor took on monumental commissions, a number of four to a maximum of eight people would have been the most which could be accommodated, even if roofed spaces are included. Naturally, many workshops would have had such large pieces ordered only rarely. Work on smaller pieces requires much less space, and more people can work on them at the same time. Yet even then, if a sculptor wanted to build up stock, he needed an extra room for storage and display of his works, but more importantly, he needed it to keep the work floor from becoming overly cluttered.\(^{814}\)

In the later fifth century, the records of the Erechtheion attest to workshops with similar numbers of workmen: commissions for fluting column drums ‘at the altar of Dione’ were given to groups of five to seven men.\(^{815}\) The interpretation of this part of the accounts has been contested. Many of the names are in genitive, which was first thought to mean they were patronymics.\(^{816}\) However, others have pointed out that that would require some of the Erechtheion craftsmen to have fathered five sons which were all old enough to help with the difficult work of fluting columns, but less than eighteen years of age (since otherwise their father’s name would not have been used, but a demotic); and all would have to be sufficiently

---

\(^{813}\) Akr. 681, cat. V 11; B 197 (pl. 19b). This problem of archaic sculptures, which are more often of large proportions than fifth-century sculpture in Athens, coincides with the absence of built workshops from the former period, which suggests that convenient open-air locations were indeed preferred.

\(^{814}\) In the house of (Mikion and) Menon, for example in room 4 in the earlier phase. The lack of space for carving and dressing the stone for the Periklean building programme must have been done largely elsewhere than on the Akropolis (Ashmole 1972, 107), particularly considering the fact that building ramps etc. were in place all through the construction and would have made the top of the hill even less workable. It is often surmised that sculptors did not carry stock until much later (Stewart 1990, 63) but Lauter 1980, *passim*, convincingly argues that Praxiteles occasionally worked for himself, partly because he could afford it. Cf. previous note.

\(^{815}\) *IG* I\(^1\) 476, 305–26 (see above n. 800).

\(^{816}\) Caskey 1928, *passim*; also Camp 2001, 97–9.
experienced for this work so as to receive equal pay.\footnote{817} This is indeed unlikely, and cautious remarks that the genitive might indicate the men’s dependence on the workshop owner, and that they are therefore probably slaves, may well be correct.\footnote{818} Approximate estimates of labourers from the Erechtheion accounts are about a fifth slaves, approximately a quarter free citizens, and about two-fifths of free non-Athenian residents.\footnote{819}

High numbers of non-citizens among the craftsmen might be a result of the Sicilian expedition of 415–412 BC, which left so many Athenian men in captivity or dead that skilled men from abroad must have been more welcome than at other times.\footnote{820} Most of these metic craftsmen lived in the demes of Kollytos and Melite, south-west and west of the Akropolis respectively (map 1), or in Alopeke outside the city.\footnote{821} The Street of the Marble Workers is usually presumed to have been in the deme Melite.\footnote{822} It is likely that non-Athenians, from metics to slaves, were among its inhabitants. Of course, slave labour in sculpture in the fifth century and later need not interfere with the notion of workshops as family businesses. The famous sculpture dynasty of Praxiteles began its remarkable career in the early fourth century and lasted for three generations: most likely, they employed slaves as well.\footnote{823}

In the Erechtheion accounts, master sculptors and each of their collaborators are individually mentioned. Fourth-century building contracts show a different practice: one master sculptor is put under contract for work which is obviously too much for one person. The sculptor, whether the same man as the workshop owner or not, is expected to do the job with his associates or slaves, and divide the wages amongst them. At the same time, guarantors for the work are named in the contract more and more frequently.\footnote{824} Another change in contracts is the object of payment. The sculptors of the Erechtheion frieze earned sixty drachmai for each male or female figure, while a child’s brought in thirty. In these fifth-century accounts, prices for sculpture had been per figure.\footnote{825} Yet in fourth-century

\footnotesize{\begin{flushright}
817 Randall 1953, 200; also Lauter 1974, 12–3. \\
818 Lauter ibid. \\
819 Randall 1953, 201–3. \\
820 Randall 1953, 203. For the welcome foreign craftsmen received at this time, see below p. 193. \\
821 Young 1951, 140–2. One workman was stated to be from the deme Kerameis (Randall 1953, 204). \\
822 Young 1951, 271. For the boundaries of Melite and Kollytos, see Lalonde 2006. \\
823 Lauter 1980; Mark 1995, 29. Another example is one of the Erechtheion sculptors, Iasos of Kollytos, who performed a liturgy in 387/6 (\textit{APF} 252; Stewart 1990, 67). Cf. below p. 195. \\
825 For example, the sculptor Praxias living in Melite was paid 120 drachmai for a horse and his rider who is leading him \textit{IG I}\textsuperscript{1} 476, lines 161–4; also Loomis 1998, 117–18. He also describes the
\end{flushright}}
Epidauros, the contractors got a bulk price for the pedimental figures of the Asklepios temple. They were responsible for delivery on time but they apparently hired others to do the carving, so they may not have been sculptors themselves.\textsuperscript{826}

None of these sources provide any comprehensive evidence on the daily wages from which the income of those working for private patrons could be deduced. Sculptors’ wages are mostly believed to have been similar those of other labourers, underpinning their low status and the presumed lack of distinction between, for example, a sculptor and a joiner, or a sculptor and a fuller.\textsuperscript{827} The much-quoted figure adhering to this lowliness is one drachma a day, the daily wage of every craftsman working on the Erechtheion in the late fifth century.\textsuperscript{828} This was similar pay to what soldiers earned at the time, at least until the Sicilian expedition.\textsuperscript{829} Considering the importance of that venture and of the soldiers of Athens in general during the Peloponnesian war, such wages may not have been so bad.

Prices of gravestones have been the subject of much study over recent years: one conclusion of this has been that fifth-century gravestones were really not a luxury for the happy few.\textsuperscript{830} The main source for sculpture prices are from litigation: funerary arrangements are quite often mentioned in speeches, mostly those from the fourth century. The costs are, however, generally in bulk: burial, the necessary rituals, digging the grave and having a monument made and set up are not budgeted separately, leaving the cost of each component unclear. Lysias describes one Diodotus as having spent less than the 5000 drachmai set aside for his brother’s funeral.\textsuperscript{831} Even with all funerary costs included in this figure, this sum seems outrageously high.\textsuperscript{832}

---

\textsuperscript{826} Burford 1969, 113–5. A partial exception to the rule that by the fourth century, labour was hired through a contractor, is the mid-fourth century construction in Eleusis recorded in IG II\textsuperscript{2} 1665–85.

\textsuperscript{827} Himmelmann 1979, 139–40; Stewart 1990, 66; Loomis 1998, 116–7 n. 37.

\textsuperscript{828} Loomis 1998, 34–6; the list of sources follows in 36–61.

\textsuperscript{829} After 412, the soldiers’ wage fell dramatically to c. 3 obols per day (Loomis 1998, 56–7; cf. 234).

\textsuperscript{830} Earlier tradition had considered gravestones a commodity for the elite. Oliver 2000, 59–60; Nielsen \textit{et al.}, 1989, 412 and \textit{passim}. Contra Hurwit 1985, 198.

\textsuperscript{831} Lys. 32.21.

\textsuperscript{832} Morris 1992, 138 remarks that Lysias’ speech seems to indicate no surprise at such a figure anywhere.
However, statues in bronze (which were in all likelihood more expensive than marble) indicate that these costs must be about right. The monument set up by the Athenians to celebrate their victory over the Boeotians and the Chalcidians at the end of the sixth century was a tithe of the ransom collected of at least 700 prisoners: simple calculation suggests a price of approximately 14,000 drachmai.833 The monument consisted of four horses, a chariot and a charioteer, all in bronze, which explains such a large sum. At this rate, the wealth of Praxiteles and some other fourth-century sculptors becomes understandable. The other end of the spectrum is a simple stele with an inscription: some believe that a modest monuments like this cost less than twenty drachmai.834 Although the bronzes in most cases would have been more monumental, some of the classical gravestones are quite extravagant, and for those examples the differences between the top and the lower end of the market seem rather steep.

The amount of twenty drachmai for a stele with or without a carved decoration is derived from the documentary reliefs of ancient Athens, the majority of which dates to the fourth century. Letter-cutters as specialist craftsmen emerged in Athens in the course of the sixth and fifth centuries.835 Admittedly, the comparison between documentary reliefs and grave stelai is hampered by fluctuating prices of the former, and because grave inscriptions are much shorter than treaties or decrees.836 Moreover, prices of official documents may not always be the same as those applied for private inscriptions.837 Still, many letter-cutters must have worked on public as well as private monuments, which makes a comparison interesting. A fragment of building accounts of the Eleusinian epistatai in 408/7 BC awards 62 drachmai to the mason ‘...for working, engraving and driving into place’ (ἐλαστίνα, i.e. erecting) the stele on which the accounts are inscribed.838 Only the part of the procedure which took place

833 ML 28–9, no. 15: IG I 501, DAA 168 +173. Cf. Hdt. 5.76; calculation by Smith 2007, 101–2. He reasonably argues that the price of 3000 dr. mentioned by a scholiast on Pindar N. 5.1 (A. B. Drachmann (1997) Scholia Vetera in Pindari Carmina, III.89), though possibly derived from the scholiast’s own experience in Hellenistic times, is not far off the price for a single bronze statue in the fifth century.
834 Nielsen et al. 1989, 414; Oliver 2000, 76–7 proposes a price between 20 and 40 drachmai.
835 Jeffery 1962, id. LSAG; Tracy 1990. Of course, letter-cutters existed in the sixth century, too, but they are easier to trace in the classical period, when the record is much more extensive and includes letter-cutters’ signatures.
837 Tracy 1990, 227 n. 8.
838 Loomis 1998, 121 n. 1, referring to IG I 386, lines 165–7.
after the stone was delivered to the mason is mentioned. The reward seems generous for the remaining work, especially when considering that the standard for daily wages, the payment of soldiers, had come down considerably at the time.\footnote{839}{If one drachma was still the daily rate, the sculptor would have needed 62 days to carve and inscribe the stele and set it up. The timing seems generous, even for a long inscription. Whether the Eleusinian record is based on an estimate of work days or gives a price per piece remains uncertain.}

Some of the Erechtheion tradesmen worked in their own field of expertise as well as doing odd jobs on the same project; both types of labour were presumably paid the same.\footnote{840}{Sculptors, however, could be paid per piece, and this would create a chance at a better wage. Nonetheless, it is unlikely that they earned considerably more than other craftsmen or labourers. In the second half of the fourth century, construction workers at Eleusis were paid according to skill, something that in the Erechtheion accounts did not happen yet.\footnote{841}{On the other hand, the Erechtheion workers were paid relatively high wages, in view of the drop in pay levels in other areas of Athenian society after 412, as a result of the developments in the Peloponnesian war. In sum, prices paid for public sculpture in Athens seem very reasonable in the fifth century, even – or especially – in times of crisis. If this was the standard of remuneration, sculptors would have been able to make a decent living. In the fourth century, the reward for those whose carving excelled rose further. Inflation was rife at the time, and sculptors' wages must have been affected. However, Praxiteles' son Kephisodotos (active in the same craft) served as a trierarch in 327/6, so some sculptors still earned good money.\footnote{842}{A base relief from the Akropolis to Athena shows a seated craftsman handing over his earnings to Athena who stands before him.\footnote{843}{It is interesting that this may be the only votive from the Akropolis dedicated by a sculptor: potters offered sculpted votives to Athena.}}}}

A base relief from the Akropolis to Athena shows a seated craftsman handing over his earnings to Athena who stands before him.\footnote{843}{It is interesting that this may be the only votive from the Akropolis dedicated by a sculptor: potters offered sculpted votives to Athena.} It is interesting that this may be the only votive from the Akropolis dedicated by a sculptor: potters offered sculpted votives to Athena.

\footnote{839}{See n. 829. Moreover, in the fourth century, the standard price for public stelai in Athens became 20–30 dr, although there were fluctuations over that period (Loomis 1998, 158–65). For the variety of sizes and amounts of text on these reliefs, see Meyer 1989 and Lawton 1995.}
\footnote{840}{E.g. the carpenters Manis and Mikion, who moonlighted as 'unskilled' labourers at a drachma a day: \textit{IG} I\textsuperscript{I} 475 ls. 11–2 and 184 (fr. XIII, I.4a); ls. 70–1 and 246–7, against e.g. line 384. See Randall 1953, 206 table 5.}
\footnote{841}{Loomis 1998, 234; cf. Randall 1953, 206–7.}
\footnote{842}{See \textit{APF} 286–90.}
\footnote{843}{Akr. 3075, cat. V 216. Cat. V 227, Akr. 577 is dated to the first quarter of the fifth century. Cf. Himmelmann 1994, 45–6 fig. 19; Chatzedemetriou 2005, 179, 225. Mitropoulou 1977, 31 suggests it is a goldsmith's votive, but there is no clear evidence of this.}
more often.\textsuperscript{844} The apparent lack of enthusiasm among sculptors to dedicate their on handiwork defies explanation. Perhaps late–archaic sculptors earned more than potters and preferred metal votives; or they could have offered their services to sanctuaries for free; or they may simply have refrained from inscribing their profession on the votives which they may or may not have made themselves. That some sculptors could afford to offer dedications is clear from the cases mentioned earlier, such as Archermos and his family.

Many sculpture–related activities can be traced in the archaeological record of archaic and classical Athens. Not only do these examples show the variety of the trades plied by the support personnel in this art world, but they also suggest that gradually, the variety and intensity of specialised crafts in fifth–century Athens grew. The excavated examples show an increase in workshops which seem to have practiced only one trade simultaneously in the fifth and fourth centuries, whether this was metal–working or sculpture. For the workshop in house F, more varied activity has been suggested, of bone–working to the production of paint and glass. The separate existence of workshops like this, next to sculpture workshops from the same period suggests that the sculptor, the smith, the letter–cutter and the pigment–seller all were specialists, and worked together in consecutive phases of single projects. The \textit{fecit} inscription on the stylus by Mikion also points in this direction. This development is similar to the growing divide between sculptors and those who worked in the marble quarries proposed in the previous chapter. It also implies increasing vertical specialisation in the sculpture world of ancient Athens. In it, the sculptor is no longer the first and last person to work on the commission, but collaborates with the support personnel, the craftsmen who practice other, complementary trades, to complete the statue or stele.

6 \textbf{Conclusion: Theory and Practice in Sculpture}

Art was on the Athenians’ mind, if the works of the fourth–century philosophers are any indication. Their discussion about \textit{technai} and the wide range of ancient opinions on their merits shows that in some circles, arts and crafts were subject to much debate. All the more

\textsuperscript{844} For a discussion of patrons and their background, see below ch. IV.4.
surprising is the rather wan image of sculpture which often appears in contemporary sources. Presumably, sculpture is among the arts, it is something pleasing or a plaything, but unlike many other art forms or crafts, sculpture is not explicitly included in this categorisation. This creates the impression that it is not quite as much under attack as certain other art forms, such as poetry or painting.

In Plato’s ideal state, craftsmen should by all means stick to their profession, since he considers specialisation the key to successful organisation of the polis. Although Plato obviously does not speak of vertical and horizontal specialisation or of art worlds, he comes close in the *Statesman:* 845

‘...the sorts of expertise there are in relation to such things, which by producing cork, and papyrus, and materials for bindings make possible the working up of classes of composite things from classes of things that are not put together.’

In fourth-century philosophy, a rudimentary notion of art worlds seems to have been thought out. In practice, infrastructure for the sculpture world expanded and processes of manufacture became more specialised in the course of the sixth and fifth centuries. It is not possible to trace these developments in the contemporary lexical record, notably in Greek words for sculptor from that period. However, the terminology of sculpture shows a level of nuance that must be linked to the high technical quality of the sculptors of the time. Moreover, the built workshops in the Athenian archaeological record of the fifth century suggests that at least at that time, sculptors were or became more resident. This applies particularly to Athens, where demand for sculpture was high. Related crafts settled nearby and functioned as support personnel for the sculpture and building trades.

The creation of stone sculpture required a myriad of activities, from obtaining all kinds of raw materials to the actual carving of the sculpture; from meticulous polishing to the applying complex patterns in paint. The support personnel who executed many of these tasks were numerous and their jobs diverged widely: quarrymen, carters, pigment traders, tool makers of all kinds, various types of smiths and metal-workers, painters, and letter-cutters are only the crafts which can be distinguished with certainty. The level of

---

845 Pl. *Ptl.* 288e.: ‘... τε καὶ ἐμψύχων δέρματα σωμάτων περιειρούσα σκυτοτομική, καὶ δόσει περὶ τὰ τοιαύτα ἔσσων τέχναι, καὶ τελείων καὶ βαύλων καὶ δεσμῶν έργαστικαὶ παρέσχου δημιουργεῖν σύνθες εἰς μὴ συντιθεμένων εἴδη γενῶν (transl. Rowe, in Cooper and Hutchinson 1997).
specialisation may have been even more advanced, but for the present it shows that sculpture was, or at least became in the fifth century, a branch of trade with considerable vertical specialisation, requiring an extensive network of craftsmen and an elaborate infrastructure of supply. In the sixth century, the situation of Athenian sculpture may as yet have been simpler. In Athens, the classical sculpture world emerged when the market for private sculpture converged with extraordinary architectural projects to create an ideal environment for the development of the trade. As the next chapter will show, patronage was to provide the necessary impetus.